Government of Saskatchewan

Annual Report 1983-84

Saskatchewan Highways and Transportation

85-4161/

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Letter of Transmittal

The Honourable Frederick W. Johnson
Lieutenant Governor
Province of Saskatchewan

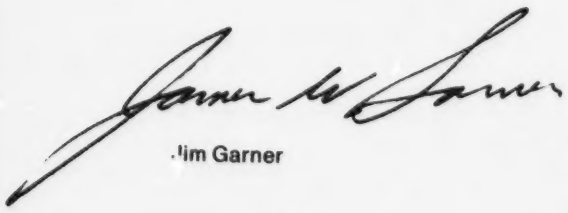
Sir:

I humbly submit to you the 1983-1984 annual report for Saskatchewan Highways and Transportation.

As times change, so must governments. My department has experienced a number of significant changes in the fiscal year under review. I must say that I am most impressed by the proficient manner in which all departmental staff have responded to these varied challenges and have made necessary adjustments while ensuring consistently improved service to the public.

It is with confidence that I submit this review of activity on behalf of all employees in the Department of Highways and Transportation. Their ongoing professionalism and diligence will continue to guarantee our province and its people excellence in transportation.

Sincerely,

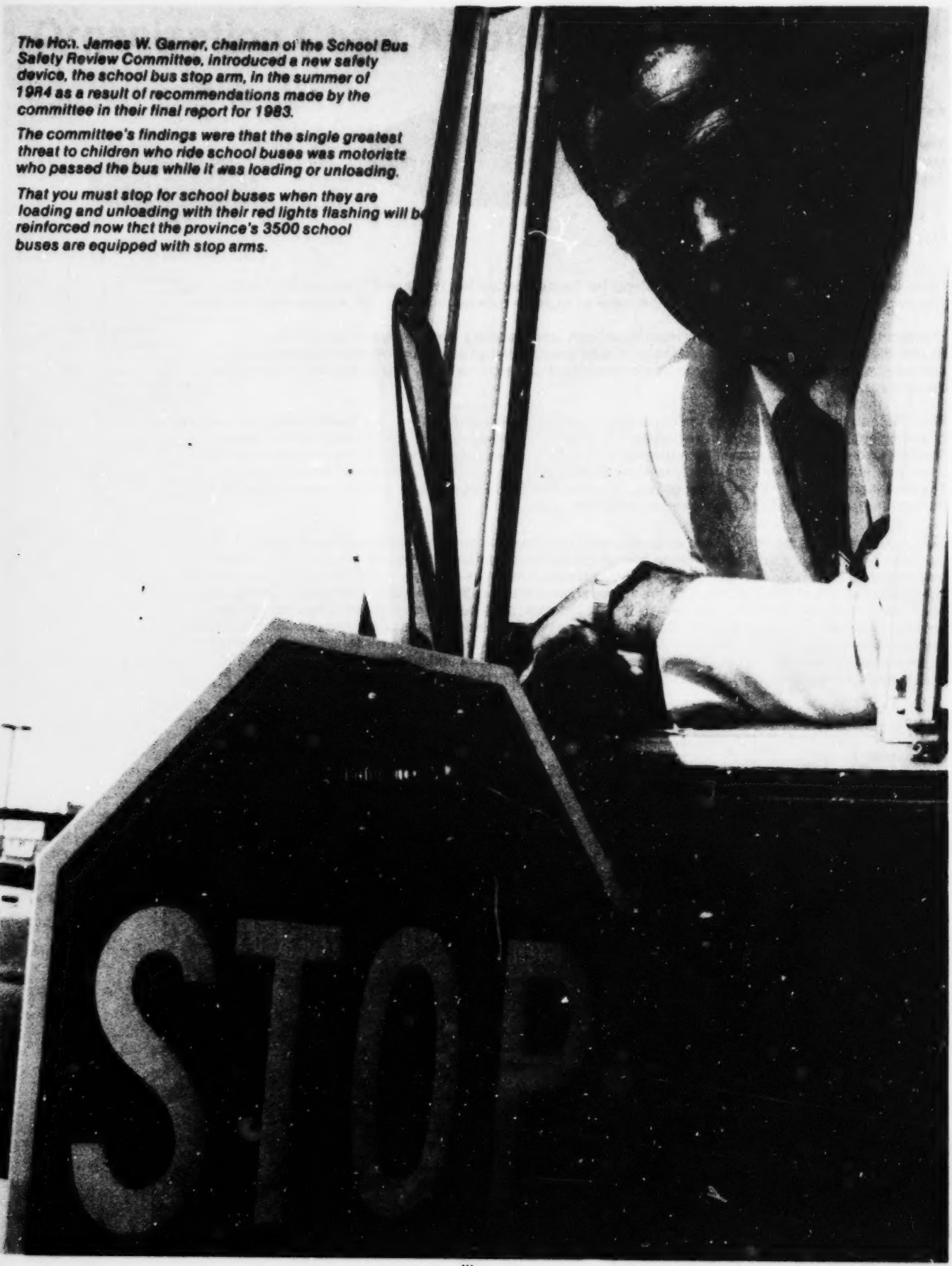


Jim Garner

The Hon. James W. Garner, chairman of the School Bus Safety Review Committee, introduced a new safety device, the school bus stop arm, in the summer of 1984 as a result of recommendations made by the committee in their final report for 1983.

The committee's findings were that the single greatest threat to children who ride school buses was motorists who passed the bus while it was loading or unloading.

That you must stop for school buses when they are loading and unloading with their red lights flashing will be reinforced now that the province's 3500 school buses are equipped with stop arms.



April 1, 1984

The Honourable James W. Garner
Minister
Saskatchewan Highways and Transportation

Sir:

I am pleased to present to you the Annual Report of Saskatchewan Highways and Transportation for the fiscal year ending March 31, 1984. This report provides an extensive review of all aspects of department activities.

Transportation infrastructure and services have been, and are today, an even more vital part of Saskatchewan's economic and social fabric. It is paramount that effective and efficient transportation services be provided to move our products to domestic and export markets. This is a major challenge for department staff.

The new initiatives undertaken by the department in the last two years address the need to keep pace with the changing and expanding role of transportation in the province. A consolidation of transportation related functions from other government departments into a new Planning and Research Division is one example of these new initiatives. Another example is the realignment of the Highway Traffic Board with the department. These organizational changes, although only recently introduced, are already proving to be of great value to the improvement of transportation services within the province.

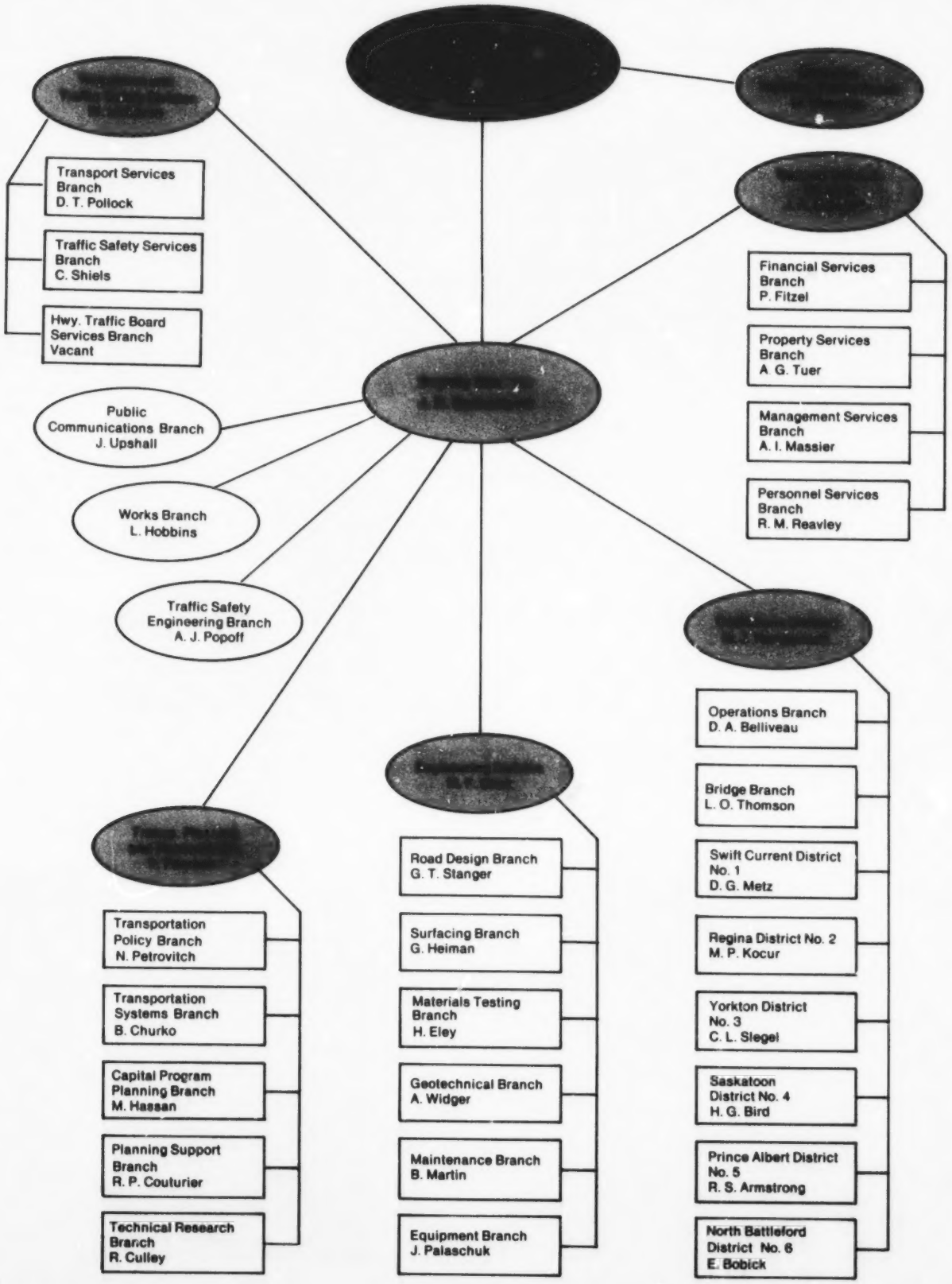
Continued emphasis is being placed on productivity improvement and on good business practices in order to achieve the best return from public funds committed to transportation. To this end, a host of new initiatives and programs have been introduced during the past year. Examples of only a few of these initiatives are: the complete rewriting of The Vehicles Act, the establishment of a Bus Safety Review Committee, a white paper outlining various alternatives to regulate all-terrain vehicles, a 24-hour central permit office, centralized booking for driver examinations, new signing programs related to school bus safety and recreational/visitor themes, increased gross vehicle weights on northern highways, an increase in winter axle weights on all highways, and overlength vehicle operating program. The magnitude and scope of this partial listing of initiatives demonstrates that all department staff were indeed very productive this past year.

I want to compliment all department staff for their efforts in providing a safe and efficient transportation system that will contribute to the economic and social development of Saskatchewan.

Respectfully submitted,

J. R. Sutherland,
Deputy Minister
Saskatchewan
Highways and Transportation

Organization Chart As of March 31, 1984


Transport Services Branch D. T. Pollock
Traffic Safety Services Branch C. Shiels
Hwy. Traffic Board Services Branch Vacant
Financial Services Branch P. Fitzel
Property Services Branch A. G. Tuer
Management Services Branch A. I. Massier
Personnel Services Branch R. M. Reavley
Public Communications Branch J. Upshall
Works Branch L. Hobbins
Traffic Safety Engineering Branch A. J. Popoff
Operations Branch D. A. Belliveau
Bridge Branch L. O. Thomson
Swift Current District No. 1 D. G. Metz
Regina District No. 2 M. P. Kocur
Yorkton District No. 3 C. L. Siegel
Saskatoon District No. 4 H. G. Bird
Prince Albert District No. 5 R. S. Armstrong
North Battleford District No. 6 E. Bobick
Road Design Branch G. T. Stanger
Surfacing Branch G. Heiman
Materials Testing Branch H. Eley
Geotechnical Branch A. Widger
Maintenance Branch B. Martin
Equipment Branch J. Palaschuk
Transportation Policy Branch N. Petrovitch
Transportation Systems Branch B. Churko
Capital Program Planning Branch M. Hassan
Planning Support Branch R. P. Couturier
Technical Research Branch R. Culley

Major Objectives

- To formulate policies and programs for the purpose of developing improved transportation systems for the province.
- To provide continued emphasis to improve traffic safety.
- To concentrate on productivity improvements to achieve the best return from public funds committed to transportation.
- To provide and maintain the provincial highway system at an acceptable level of service and safety to all users.
- To provide transportation facilities necessary for social betterment and resource development.
- To assist urban centres in the development of arterial road networks.
- To provide assistance to improve and operate community airports throughout the province.

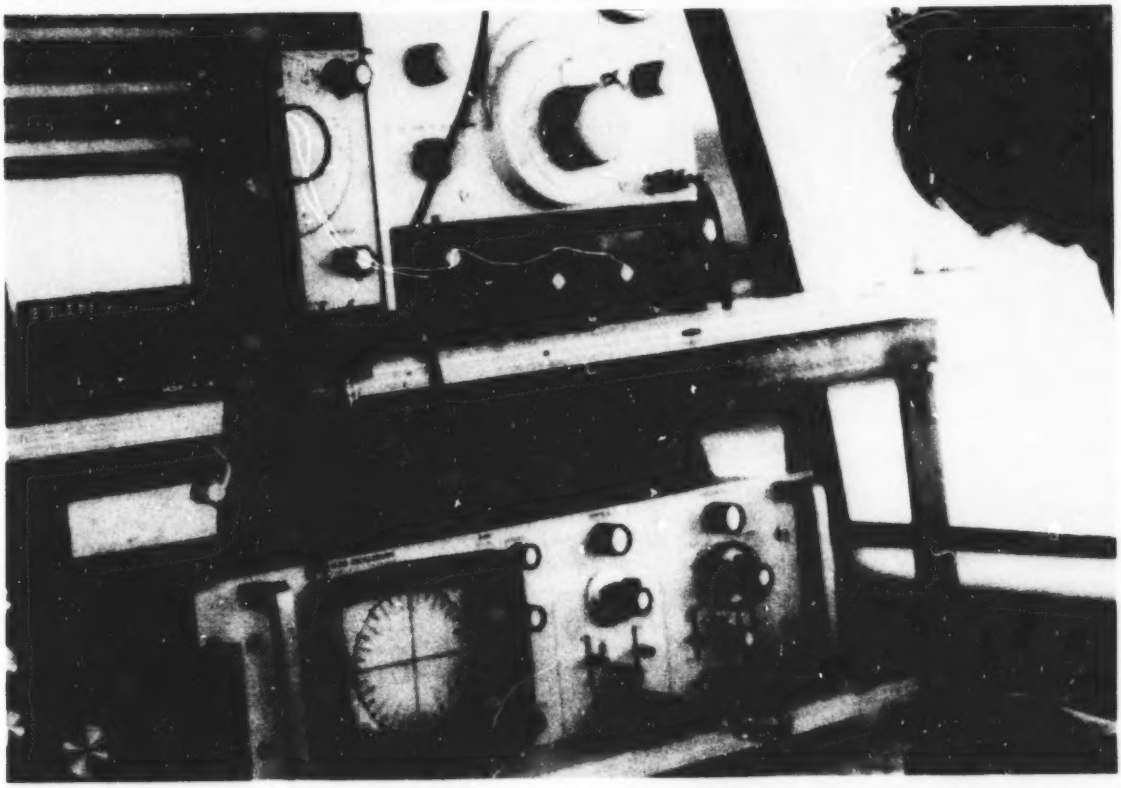
Mission

To plan, implement and manage an integrated multi-modal transportation system which provides for the safe, efficient movement of people and goods at a level of service acceptable to the public for the economic and social development of the province, within the mandate and resources provided by the Government of Saskatchewan.

Bill Culley (1936-1984) — A man dedicated to the improvement of Saskatchewan's provincial highway system, Culley was employed by the department for 26 years. Under his guidance and initiative, many research projects and studies were undertaken resulting in world-class methods and procedures, instrumentation and equipment.

Both the department and Research Director, Culley, came to be known and respected internationally in the field of highway engineering research.

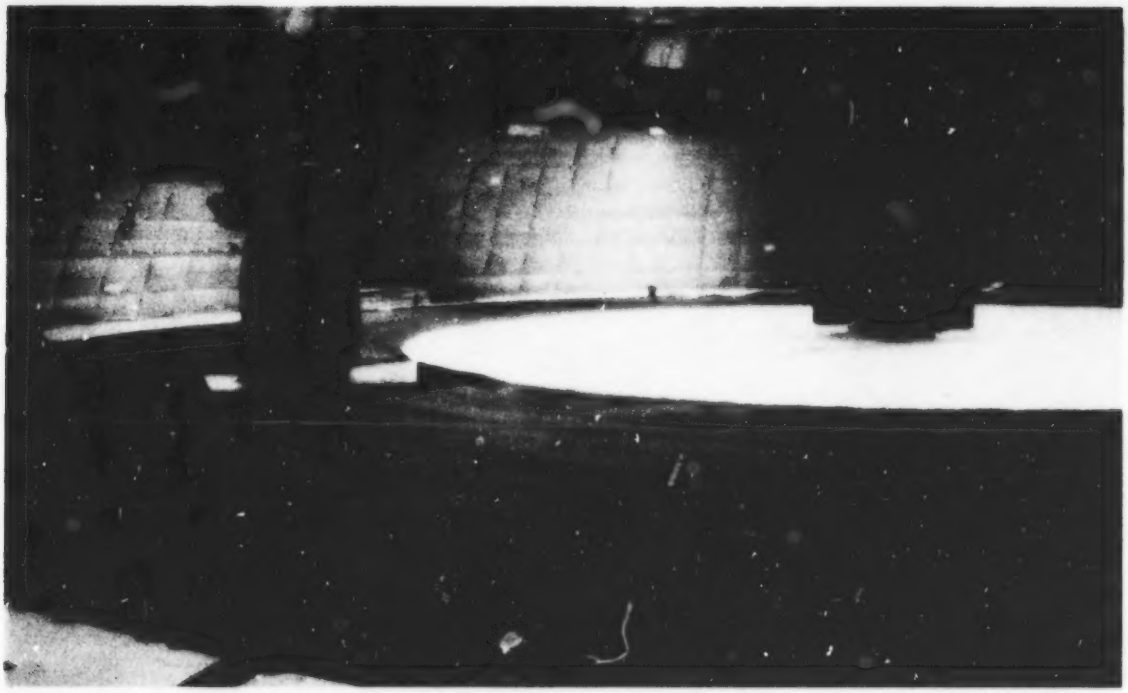
Some of the advancements accomplished by the department during the years Culley served as Director of Research Branch are highlighted here. These contributions have provided a solid base from which a new phase of research and planning can build under the new planning and research division set up over the past year.



Department personnel demonstrate a dynamic testing device in use by the department since its construction in 1974. This unit was patterned after the Shell system. It uses a non-destructive method utilizing vibration wave-length measurement to measure subgrade and pavement strengths.

This instrument is particularly adopted to research since it is capable of measuring the strength of each layer in the system.

Bill Culley
1936-1984



The pavement test track, located in Regina, was both designed and built by the department. When completed in 1977, it was the only indoor highway surface in Canada. The extremely complex equipment housed within the building is capable of simulating highway traffic and any type of weather condition, thus giving researchers control over experiments on full-scale highway structures.

Design data on thin or staged pavements can be obtained as well as information for studies for conventional pavements including the variables of loading, materials or environmental conditions.

With the development of the pavement premark unit, the time taken to complete the premark stage of pavement marking was greatly reduced. The manual surveying method progressed at the pace of 16 km per day compared with the production rate of 16 km per hour achieved with the premark unit.

The pavement premark unit features a closed circuit colour television guidance system utilizing five cameras, a split screen image and two paint guns. It was built in 1976 by the Division of Control Engineering of the University of Saskatchewan using the ideas and suggestions of the department's pavement marking supervisor.

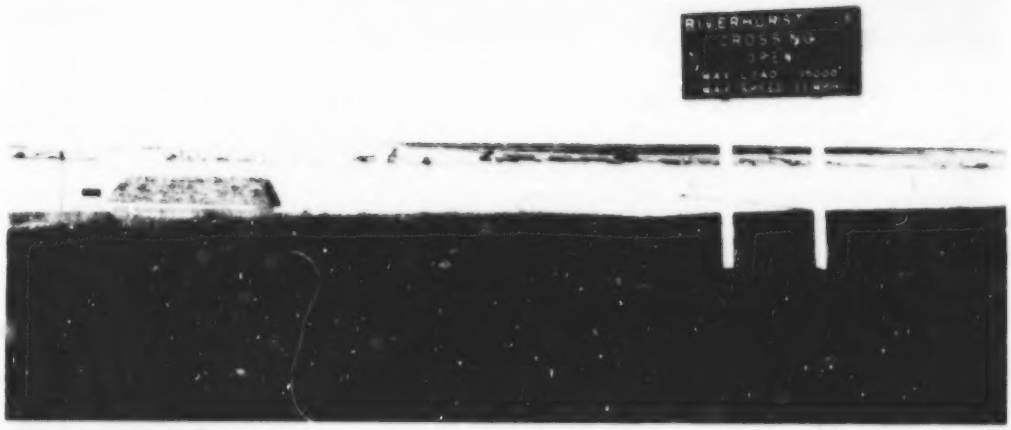
The unit is now patented in Canada and in the United States, with patents pending in France, Great Britain, Japan, Australia and West Germany. Several firms are now considering commercial production.

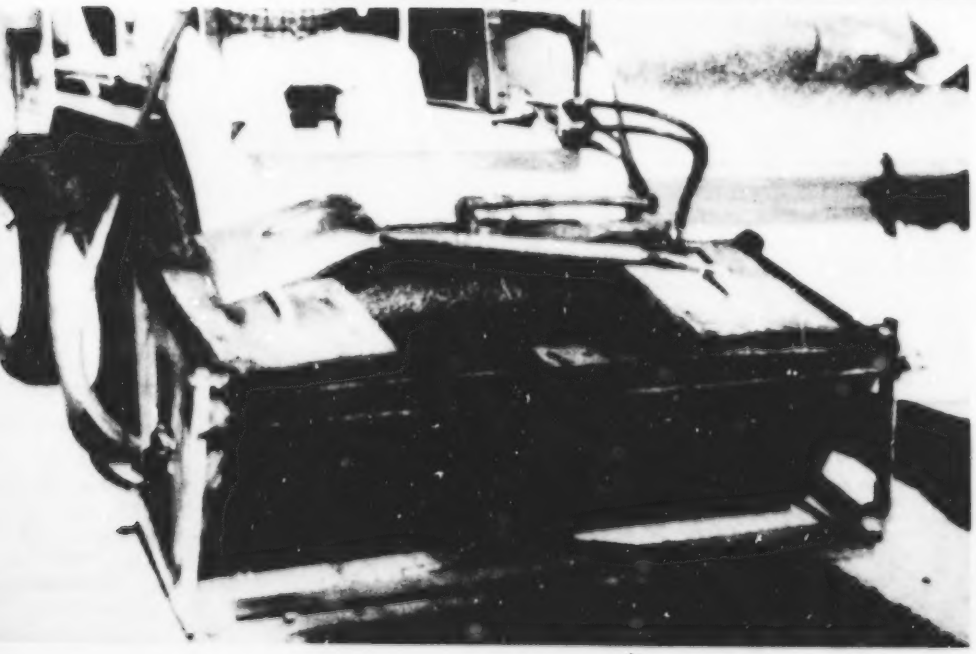
The department completed design and construction of a large high-speed pavement marking unit in 1983. This machine is one of the most advanced units of its kind and employs microprocessors, a television guidance system and can operate at speeds of up to 40 km/h.

The department striped 22 327 km of centreline and 16 179 of shoulderline during the 1983-84 fiscal year. This represents approximately 1500 km above the objective and 2500 km above the previous best year. This was accomplished within the budget allocation using less manpower hours and less equipment hours.

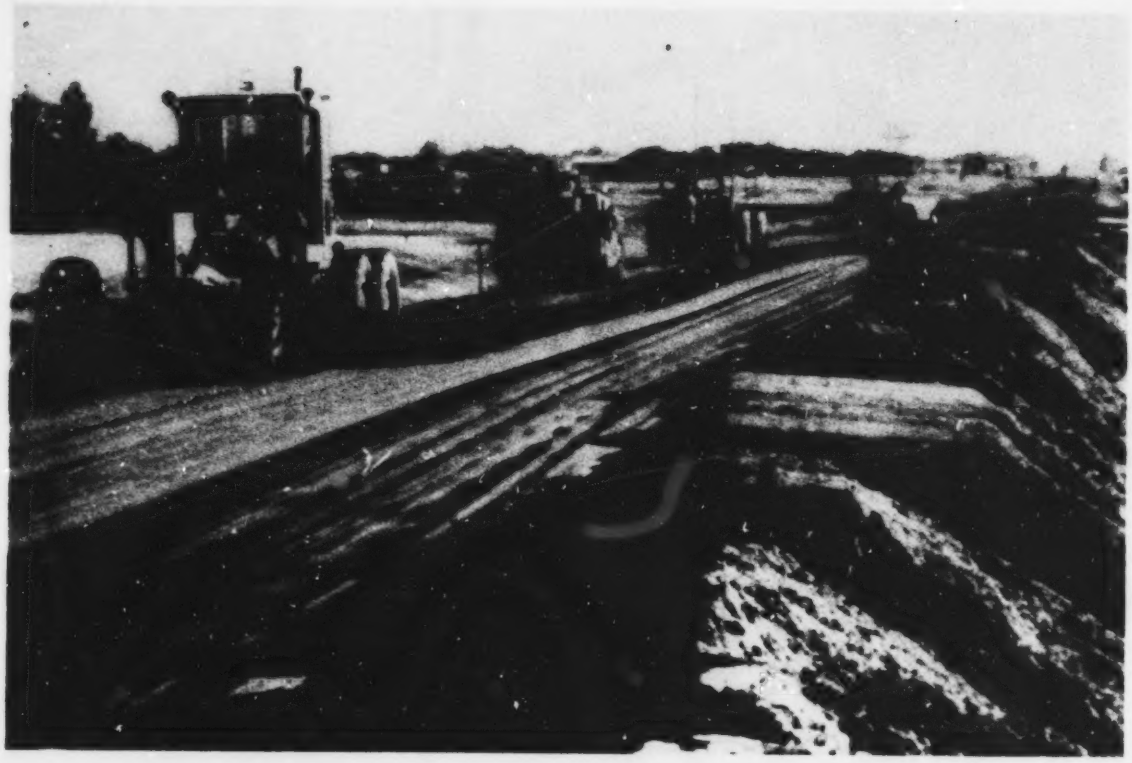
e Riverhurst ice crossing nducted on Lake efenbaker (1974-75) was a ique project in that an ice ossing had never before en attempted this far south r on a reservoir. The project s conducted by Research anch in co-operation with e Swift Current District and e Saskatchewan Research uncil.

sting consisted of daily nitoring of the 2195 metre crossing for stress-strain aracteristics of lake ice bjected to static and namic loads. Vehicles were stricted to 15 876 kg with a ximum speed of 50 kph.





Sand-Asphalt-Sulphur Maintenance Mixes have been used successfully in Saskatchewan for several years as a modifier and extender in asphalt mixes. The combination of 30-40% sulphur into asphalt cement is used to produce a conventional paving mixture with some cost saving. The alternative to this formula is the Shell "Thermopave" or "Thermopatch" process which combines high percentages of asphalt and sulphur with poorly graded sand aggregate to form a fluid mixture, which is then applied to the roadway and leveled off. The most successful of the two formulas has been the "Thermopatch" process which has proven ideal for leveling or shimming shallow depressions at cracks, culvert locations or bridge approaches. This has become standard procedure for restoring ride or problem pavements.



Waste coal ash (lagoon ash) has been successfully used on many highways as a replacement for conventional gravel subbase materials. Because the disposal of this ash is of primary concern to Saskatchewan Power Corporation, the gravel-scarce Estevan area saves SPC disposal costs as well as saving the Department of Highways and Transportation significant amounts of money otherwise spent on gravel. Highway sections constructed to date by the department using lagoon ash are performing well after 5 years of service, indicating the ash is a viable alternative material in pavement structures. This photo was taken on Provincial Highway 47.

Traffic Safety Engineering

Al Popoff

The basic function of the branch is to reduce traffic accidents and the associated economic losses. The branch is responsible for the following activities:

- Manage a central traffic accident information system for the province.
- Carry out traffic accident and traffic engineering studies.
- Design, order, and administer all traffic signs and controls on provincial highways.
- Develop and priorize an annual traffic safety improvement program for provincial highways.
- Administer access control to provincial highways.
- Study and recommend appropriate levels of speeds on provincial highways.

Highway Safety

The department is committed to improving safety on provincial highways. The concept is to firstly take measures that will prevent an accident and secondly to provide a forgiving highway environment that will reduce the severity of an accident.

Safety is built into new highways. Spot improvements such as guardrail installations, channelization. approach flattening, breakaway sign posts, flashing lights and clearing sight triangles upgrade the safety of older highways.

The Safety Improvement Program and other factors have contributed to a downward trend of highway accidents during the past ten years.

- The injury accident rate decreased by 57%.
- The fatal accident rate decreased by 45%.
- Injuries decreased by 38%.
- Fatalities decreased by 30%.

Traffic Accident Information System

The Provincial Traffic Accident Information System (TAIS) has completed its fifth year of operation. TAIS now provides information about 215,000 accidents that occurred in Saskatchewan. The purpose of the system is to identify inadequacies of drivers, vehicles, and roadways so that appropriate actions can be taken to reduce losses due to traffic accidents.

Regular output reports from TAIS are sent to interested persons, agencies and municipalities on a monthly, quarterly and year-end basis. Monthly summmaries and news releases are distributed to keep people informed about the current number of traffic accidents.

A comprehensive annual traffic accident report is published and widely distributed. A pamphlet highlighting traffic accident facts was prepared and two issues of a TAIS newsletter were sent to data users.

Two terminals in the branch now enable the direct remote entry of TAIS information into the central data bank at Sask Comp.

All fatal accidents were monitored. Individual detailed reports were prepared on a selected basis and weekly summaries submitted to interested users.

A paper was prepared and presented at the Driving Without Impairment Symposium held in Saskatoon in March entitled "What T.A.I.S. Reveals About Drinking and Driving Accidents in Saskatchewan".

Traffic Control Devices

Traffic signs have two important functions. Firstly, highway signs provide information and warning to drivers so that they can travel safely, for example, stop signs, and curve signs. Secondly, highway signs provide navigational information to enable a driver to get to a destination and locate needed facilities for example, gas, food, lodging signs, highway route markers and guide signs.

Uniformity, placement, legibility, design and colour visibility of highway signs are very important factors that must be considered and carefully managed. The branch participates in national and international projects that set signing standards and design.

As part of the overall effort to improve school bus safety, two related signing programs were implemented. Two hundred signs were erected throughout the province reminding motorists that they are required to stop when school bus signals are flashing. School divisions were invited to identify problematic school bus stop locations. A total of 280 school bus stop warning signs were erected to March 31, 1984.

Other traffic control projects and programs were:

- New 900 series route marker for Provincial Road signing in northern Saskatchewan.
- Inventory of existing flashing lights on highways.
- Pedestrian crosswalk lights and policy.
- Qu'Appelle Valley tourist signing program.
- Policy and programs developed for Provincial Park Northern Outfitters signing.

Safety Activities

The branch continued to be active in a variety of traffic safety related activities.

- Arranged with the co-operation of the Saskatchewan Safety Council a five day professional Traffic Engineering Course for persons in Saskatchewan responsible for the safe and efficient movement of traffic.
- Completed a review and study of speed limits on community access roads.
- Participated in five traffic safety events and displays.
- Provided information and service to urban officials in connection with cost sharing programs. More than 70% of all accidents occur in urban areas.
- The Seat Belt Survivor's Club is managed by the branch. There are 2,100 members that have given personal testimonials about the value of seat belts. The Royal Canadian Mounted Police now present some of the memberships on behalf of the Department of Highways and Transportation.

Total Number of Accidents by Road System

Year	1978	1979	1980	1981	1982	1983
Highways	4,425	5,921	6,005	6,211	6,008	5,561
Rural	9,205	5,007	5,403	5,631	5,154	4,753
Urban	22,428	33,386	33,538	25,510	28,487	28,921
Other*		3,196	3,328	933	717	620
Total	**36,058**	**47,510**	**48,274**	**38,285**	**40,366**	**39,855**

Injuries by Road System

Year	1978	1979	1980	1981	1982	1983
Highways	2,143	2,318	2,407	2,266	2,155	1,967
Rural	2,727	1,616	1,684	1,772	1,598	1,477
Urban	3,987	4,685	4,301	4,350	4,510	4,597
Other*		462	492	272	253	221
Total	**8,857**	**9,081**	**8,884**	**8,660**	**8,516**	**8,262**

Fatalities by Road System

Year	1978	1979	1980	1981	1982	1983
Highways	150	143	140	139	118	126
Rural	109	55	62	67	61	53
Urban	37	64	43	49	52	39
Other*		28	20	7	9	17
Total	**296**	**290**	**265**	**262**	**240**	**235**

*Included in Rural Roads prior to 1979

Works Branch

Len Hobbins

Works branch functions in four main areas; grading, surfacing, bridges and winter road construction. The branch provides these and other specialized construction services for both our own and other government departments and agencies.

The branch employs between 200 and 250 people during peak operating season. These include equipment operators, truck drivers, plant operators, cooks, administrative personnel and supervisors. The nature of our work usually requires people to be away from home for long periods of time, working out of mobile self-contained camps. A large number of employees in the Works Branch crews in the north are natives.

Grading Section

Two grading crews moved 797 547 m^3 of earth materials.

Control Section 155-03 south of La Loche was completed.

Second grading was completed on Control Section 165-04 completing that section of road between Beauval and Pinehouse.

Construction of Control Section 925-02 between Dillon and Michel Village was completed along with the construction of five kilometres of access roads for the Department of Indian Affairs in the villages of Dillon, St. Georges Hill and Michel Village.

Upgrading and spot improvements were made on five kilometres of Control Section 21-18 south of Pierceland. Approximately 10 000 m^3 of earth material was subcut on one kilometre of street in the village of Ile a La Crosse and replaced with select material before surfacing of the street was undertaken.

Surfacing Section

Five surfacing crews completed various road and custom work projects throughout the province. Projects included oil treatment, asphalt mat on subgrade, lime stabilization, rubber asphalt seal, thermo-patch and sub-grade preparation.

The drum mix plant mixed 17 453 m^3 of asphalt mix and placed 29 589 m^3 on the road.

The crews completed 199.3 km of rubber asphalt seal, lime stabilized 11 km, filled 13,985 depressions and 8100 m of wheel ruts using 811 t of sand sulphur asphalt mix, undertook 20 custom work projects and placed 37 000 m^3 of select sand.

Bridge Section

The seven bridge crews constructed 38 new bridges and repaired 169 existing bridges. 1100 lineal m of concrete curb, sidewalk and driveway approaches were constructed for the village of Ile a La Crosse.

Major deck repairs were made to the traffic bridge over the Saskatchewan River between North and South Battleford. Traffic was limited to southbound travel during the removal and replacement of 3670 m^2 of concrete bridge deck.

1563 m^2 of high density concrete overlay was placed on overpasses at North Battleford, Carlyle and Secretan.

Winter Road

The 188 km winter road from Cluff Lake to Uranium City was constructed again in 1983-84. The road opened on February 17/84 to heavy traffic and closed March 24/84.

As has been the case for the past two winters more freight was hauled south than north. Freight going north was building material and fuel being hauled to Fond du Lac and Stony Rapids. Freight going south was household effects, bunker "C" fuel, double wide mobile homes and mining equipment.

Training

Works Branch completed several training programs this year. Courses in management, safety and air brake training accounted for 74 man-days of classroom instruction.

Public Communications Branch

Jack Upshall

The mission of Public Communications Branch is to plan, co-ordinate and monitor information programs, and to foster understanding and acceptance of department policies and programs.

Branch staff work in five primary areas to achieve this mission.

- Co-ordination, production, and distribution of official and statutory publications.
- Planning and co-ordination of public information materials about department policies, programs and services.
- Co-ordination of, and responses to, public enquiries for information; and monitoring public opinion about activities.
- Providing services to improve the effectiveness of branch and department communication undertaken by department staff.
- Provision of administrative services to maintain the branch in a state of readiness to respond to routine or emergency communication needs.

Official and Statutory Publications

The Official Highway Map of Saskatchewan is the branch's major publication. There were 450,000 1984 maps printed. The 1984 map was substantially revised. City route maps were enlarged and placed on the information side. The mileage chart was revised and an 'important signs' section was added. Response to the changes was positive and was referred to in a major Saskatchewan daily paper as the best map to date.

Fifteen hundred copies of the department's Annual Report were produced by the branch. The annual report also was revised in terms of layout and design. This revision also was greeted positively.

The branch also co-ordinated the production of the former Transportation Agency's final annual report. Two hundred copies of that report were printed.

Branch staff co-ordinated the production of the Traffic Accident Information Report. The TAIS Report is a comprehensive statistical summary that is well received each year.

Public Opinion and Information

Over 675,000 pieces of information were distributed by branch staff and approximately 3,950 telephone enquiries were handled.

Staff produced 178 news releases for distribution and produced a total of 313,000 copies of 14 informational pamphlets over the year. The increase in news releases and information pieces reflected the additional responsibilities incurred by the incorporation into the department of the Highway Traffic Board and the Transportation Agency.

Public information campaigns were again undertaken for the department's Highway Hotline Information service and for Advance Notice of the spring road bans.

A summer information campaign was launched which informed motorists that it is now the law that when passing highway construction and maintenance workers, the speed limit is 60 km/h.

The branch printed 7,000 copies of the Highway Construction Map. The information side of the map depicted a detailed route map of the detour in place for the Battleford's bridge deck repair.

The branch acted in a support role for the Saskatchewan School Bus Safety Review Committee, release of the Blue Paper on the Transportation of Dangerous Goods and the White Paper on All Terrain Vehicles.

Other Highlights

The branch was instrumental in organizing two official openings. The extension of four lanes west of Webb and the provincial portion of Lewvan Drive from Regina Avenue to the Trans Canada were major highlights of the year.

Other public relations functions included a special ceremony recognizing Seatbelt Survivors 2000 and the production of an audio visual presentation for the Roads and Transportation Association of Canada's 'Nation on the Move'.

Towards the latter part of the year, branch staff commenced a series of Communications Audits.

Essentially, the audits are a management tool to assist branch staff in identifying objectives, goals and procedures that will improve the overall productivity of the unit. The need for the audits became necessary with the increased responsibilities assumed from the Highway Traffic Board. To date, the results of the audit have been beneficial both from an internal and external perspective. The audits shall continue into the next fiscal year until all aspects of the branch's new role have been covered.

Operations Division

Operations Division staff are responsible for implementation and administration of operational programs and management of the designated provincial transportation facilities for the department within the specified levels of service and resources. The Operations Division responsibilities are carried out through six districts and two head office branches.

With average weather conditions during the spring and summer, and excellent fall conditions, good progress was made on all construction projects. The section of the Trans Canada Highway from Beverly to west of Webb was completed along with substantial completion of grading from Qu'Appelle to Indian Head. The Yellowhead Highway saw the completion of the approaches to the new Borden Bridge and a major portion of the highway from Paynton to Maidstone. Many other construction projects throughout the province were completed with excellent workmanship exhibited.

The department's maintenance staff were able to meet their objectives in providing the required level of service to the travelling public. A mild winter was experienced, however, there were a number of occasions on which icy conditions resulted in increased amounts of salt being used.

The department met its objectives in providing assistance to local governments for improvements of streets and airports. A total of 62 communities participated in the Urban Assistance Program for street improvement, and 33 communities participated in the Airport Assistance Program for airport development and maintenance.

Work has commenced on the review of Operations Division strategies. Further work will be required this coming year towards developing strategies in an effort to improve the managerial effectiveness of Operations Division.

Details of specific programs and accomplishments are provided in the following individual branch and district reports.

m.j. Herasymuik

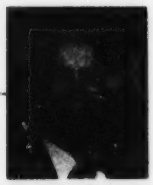
Myron Herasymuik
Director of Operations Division

James W. Garner
Minister, Highways
and Transportation

J. R. Sutherland
Deputy Minister

M. J. Herasymuik
Operations Division

D. A. Belliveau
Operations Branch



C. L. Siegel
Yorkton
District No. 3

L. O. Thomson
Bridge Branch

H. G. Bird
Saskatoon
District No. 4

D. G. Metz
Swift Current
District No. 1

R. S. Armstrong
Prince Albert
District No. 5

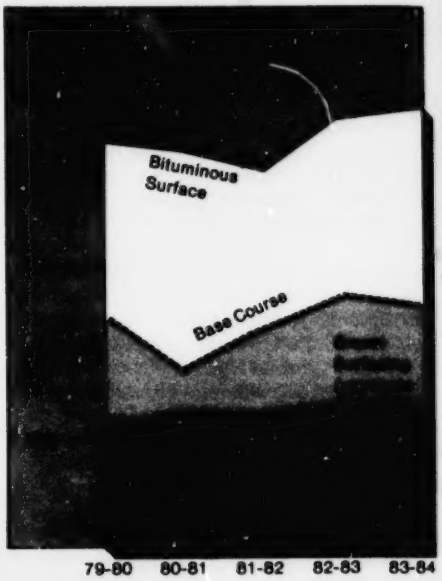
M. P. Kocur
Regina
District No. 2

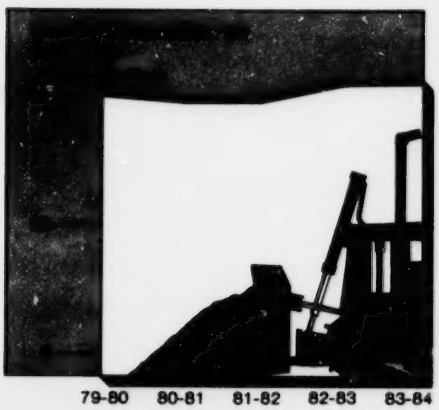
E. Bobick
North Battleford
District No. 6

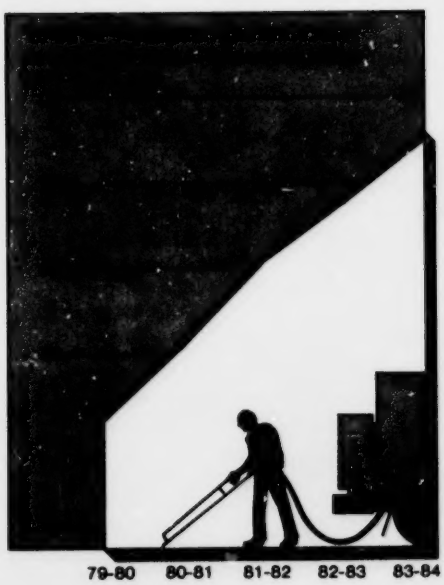
Operations Branch

Operations Branch provides executive, technical and financial services to the Operations Division. Major activities of the branch included:

- Management of centralized activities related to tendering, scheduling and contract administration.
- Development and control of department annual capital and maintenance programs and budgets.
- Administration of purchasing construction and maintenance materials.
- Co-ordination of cost-shared programs.







Construction Tenders

Eighty-nine construction tenders valued at $50 million dollars were awarded during 1983-84. In comparison with the previous year, 27 more tenders were issued with a $26.3 million dollar increase in the value of contracts awarded.

Contracts are tendered throughout the year to provide a balanced workload for contractors. In the fall and winter, heavy emphasis is placed on processing aggregates so that much of the hauling can be done in the winter to minimize damage to haul routes and to create winter work.

Unit bid prices for earth work increased slightly, while unit prices for surfacing items were in line with the bid prices received in the previous year.

Grading

The amount of earth excavation work completed during the year was 9 152 309m^3.

There were 306 km of new construction completed with 60 km grading work under way at year end.

81-82 82-83 83-84

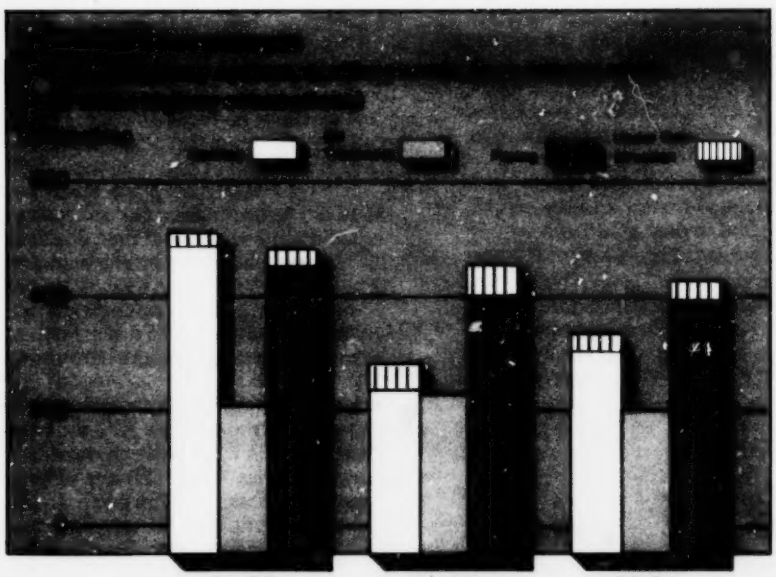
Surfacing

The quantity of bituminous mix used on contracts in 1983-84 increased to 379 341 t from 191 618 t. The quantity of sub-base and base material used in 1983-84 was 2 035 417 t compared to 1 549 161 t in 1982-83.

During the year, 190 km of oiling, 53 km of AMOS, 194 km of rubber asphalt surface and 344 km of pavement were completed.

Urban Transportation Assistance Program

Under the Urban Street Assistance Program, $20,102,499 was provided to assist 62 communities to improve streets. In addition, a total of $106,730 in financial aid was provided to 18 communities under the Urban Traffic Safety Program.



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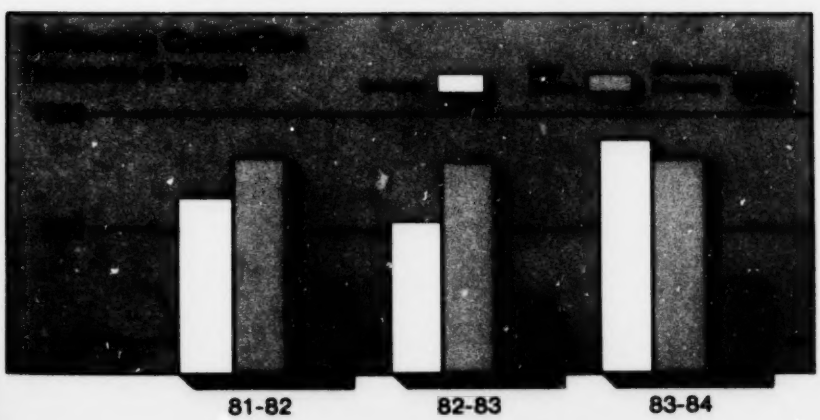

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Airport Assistance Program

Thirty-three local governments participated in the Airport Assistance Program (southern) administered by the branch. The department provided $234,768 in assistance under the program. The department also spent $46,659 towards the installation of non-directional beacons at two airports.

Rural Transportation Assistance Program

Operations Branch administers a program to provide transportation services to communities in rural areas not presently served by other public transportation.

The provincial government, through the Department of Highways and Transportation, underwrites the net operating cost of six routes which totalled $134,218 in 1983-84.

In addition to the above routes, Operations Branch also administers the bus lines into Sandy Bay and Deschambault in Northern Saskatchewan. During the year, $57,936 was spent on these two northern feeder service lines.

Other Highlights

Automatic railway crossing signals were installed at eleven locations during the year.

Community access lighting was installed at 10 locations during the year at a cost of $39,283. The department also provided lighting at 51 highway intersections at a cost of $247,498.

52,559 calls were handled on the department's Hotline Winter Road Information Service.

338 purchase orders for construction and maintenance materials valued at $35,837,000 were processed.

542 payments to contractors were processed totalling $48,281,000.

Bridge Branch

Bridge Branch mission is to design, construct, maintain, and manage the bridge component of the department's road transportation system, and to provide a source of structural and bridge-related expertise for other department and government units to established levels of service and within available resources.

Design

Design work was completed for two major bridges over the North Saskatchewan River, one located near Borden, and one located north of Lloydminster. The design of a highway-railway grade separation structure located near Saskatoon also was completed.

Plans were prepared for the construction or widening of eight other precast concrete and timber bridges involving 1045 m^2 of new bridge deck area. Plans also were prepared for traffic barrier retrofits totalling 790 m of barrier and involving seven bridges.

Construction

Major betterments were completed on a 434 m bridge over the North Saskatchewan River on Highway No. 4 between Battleford and North Battleford. The work included restoration of the concrete deck, installation of waterproofing membrane on the deck surface, and the re-installation of the asphalt wearing surface. Special attention was given to the traffic accommodation details in order to minimize the inconvenience to the public while also achieving a high level of safety.

New bridges using standard modular components were constructed near Rush Lake on Highway No. 1 and over the Souris and Pasquia Rivers on Highway No. 9. A two span timber bridge was reconstructed in conjunction with a grading project on Highway No. 55 west of Meadow Lake.

Maintenance

Deck resurfacings, using dense concrete overlays, were completed on grade separation structures located at both interchanges of Highway No. 4 and Highway No. 16 between Battleford and North Battleford. The concrete overlay was also placed on a highway-railway grade separation structure on Highway No. 1 near Secretan, and on a bridge located south of Carlyle on Highway No. 9.

The deteriorated concrete superstructure on a bridge located west of Maple Creek on Highway No. 1 was replaced with new modular bridge components, while keeping the disruption of traffic movements to a minimum.

Minor repairs were completed on another 99 bridges.

Other Highlights

Programmed inspections were done on a total of 170 bridges. This total includes the bridges which previously were the responsibility of the Department of Northern Saskatchewan.

The concrete decks of 18 bridges were monitored for corrosion rate of the steel reinforcement.

The branch assisted in the evaluation of 24 requests for permits concerning bulk commodity hauls, and of 350 referrals for permits for single trip overloads.

The branch assisted with the Special Safety Improvement Program through the installation of new traffic barrier systems at 13 bridges.

Summary of the Work Done During 1983-84 on Provincial Highways

Highway and Control Section Number	Location	Description of Work
1-14	On 26-17-4-3 over CPR at Secretan Westbound	Major deck repairs to 40 m three span reinforced concrete beam bridge
1-17	On 33-16-11-3 over Herbert Canal near Rush Lake-westbound	Construct 15 m pile bridge with precast concrete deck
1-22	On 35-11-30-3 over Box Elder Creek near Saskatoon-Alberta border	Replace existing concrete deck and barrier system on 18 m two span reinforced concrete bridge
4-14	On 6-44-16-3 over North Saskatchewan River south of North Battleford	Major deck repairs 434 m six span steel girder bridge
4-14	On 6-44-16-3 over P.H. 16 south of North Battleford	Major deck repairs to 51 m three span concrete T-Beam bridge
9-1	On 35-1-3-2 over Souris River north of Northgate	Construct 48 m four span pile bridge with precast concrete deck
9-2	On 18-7-2-2 over Moose Mountain Creek south of Carlyle	Major deck repairs to 24 m steel girder bridge
9-15	On 29-49-1-2 over Pasquia River north of Hudson Bay	Construct 24 m two span pile bridge with precast concrete deck
16-27	On 31-43-16-3 over Highway No. 4 south of North Battleford	Major deck repairs to 37 m three span concrete flat slab bridge
21-4	On 29-9-26-3 over Maple Creek south of Maple Creek	Widen existing 12 m two span pile bridge and install new traffic barrier
21-4	On 9-10-26-3 over Maple Creek south of Maple Creek	Widen existing 24 m four span pile bridge and install new traffic barrier
21-4	On 32-10-26-3 over Maple Creek south of Maple Creek	Install W-beam barrier on 18 m concrete bridge
55-15	On 35-59-20-3 over Rollo Park drainage ditch west of Rapidview	Constuct 12 m two span pile bridge

Swift Current District

District staff are responsible for 4224 km of highway. Excellent fall weather conditions permitted the completion of most construction and maintenance projects in the district.

Design and Testing

The design section is responsible for designing highway subgrades, safety improvement projects, illumination projects and miscellaneous projects for the special construction program. This section also operates the District Materials Laboratory.

The design section staff completed 58 km of subgrade design and 44 km of preliminary survey during the year. Soils laboratory staff processed a total of 5,323 samples for gravel pit control, subgrade and pavement design, and construction contract administration.

Construction

The construction engineering section is responsible for the supervision of construction projects, the materials location program and the supervision of cost-shared programs.

During the year, 26.8 km of subgrade were constructed and 63.4 km surfaced of which 16.2 km were oil treatment.

The major focus of the construction program was the completion of the four-laning of the Trans-Canada Highway from Beverley to west of Webb.

The materials location unit conducted materials searches resulting in the location of 820 000 m^3 of sand and gravel.

Maintenance

Surface maintenance activities were again interrupted by late spring snowstorms that brought snowplows back into operation but the short duration of this situation did not adversely affect the maintenance work schedule.

Maintenance forces used 323 800 t of processed aggregate, 83 600 t of bituminous mix and 19 200 000 L of liquid asphalt to maintain public and provincial highways under district jurisdiction.

Maintenance forces also repaired 38 km of weak or failed subgrades and shoulders.

The district maintains 24 section crews and five special crews located in 20 communities within the district in order to carry out the maintenance program.

The roadway maintained by the district consists of the following:

- 148 km gravel surface
- 2867 km oil treated surface
- 1043 km paved surface (2-lane)
- 166 km paved surface (4-lane)
- 58 km tourist facility roadways

Regina District

The Regina district is responsible for 4837.94 km of provincial and public highways, including 102.61 km of tourist facility access roads.

In addition to regular maintenance activities, major highway improvements included subgrade, oil treatment, surfacing, AMOS, rehabilitation and seal coat construction work.

Design and Testing

During the year 98.8 km of field survey, 101.6 km of subgrade design and 80.5 km of pavement design were completed.

505 000 m^3 of sand and gravel were tested and located. Construction and maintenance activities used 438 429 m^3 of sand and gravel. Public organizations and private individuals obtained 238 940 m^3 of gravel under 130 separate permits.

Construction

Construction crews graded 79.6 km, surfaced 84.3 km, and constructed AMOS on 9.5 km of highways and oil treated 10.7 km of community access roads. Another 15.5 km of paved highways were rehabilitated.

Good construction progress was achieved on Lewvan Drive between Highway No. 1 and Regina Avenue in the City of Regina. Lewvan Drive was opened to traffic in November enabling continuous travel along its length.

Also, good progress was achieved in subgrade construction for the 4-laning of Highway No. 1 between Indian Head and Qu'Appelle; widening of Highway No. 9 between the USA Border and Alameda; and widening of Highway No. 48 between Highway No. 47 and east of Candiac.

Pavement construction was completed on Highway No. 13 east of Redvers, Highway No. 18 east of Outram, and Highway No. 210 south of the Qu'Appelle Valley. Grading and paving work on Highway No. 11 was significantly completed in the Disley area and 4-lane divided highway travel was restored early in November.

Maintenance

Maintenance crews produced 128 000 t and applied 79 700 t of asphalt patching mix, applied 436 km of seal coat, seeded 340 ha of grass and mowed 6200 km of grass along shoulders and highway roadsides. Contractors applied 224.5 km of seal coat on oil treatment and paved highways.

Highway maintenance is provided with 34 section crews and six special crews located in 31 communities throughout the district.

New section maintenance headquarter buildings were completed at Estevan. New buildings were started at Fairlight and Francis.

Shareable Programs

The cities of Regina, Moose Jaw, Weyburn and Estevan received a total of $8,941,092 under the Urban Assistance Program for street and traffic safety improvements.

The City of Regina continued major construction work on Lewvan Drive and Saskatchewan Drive east of Lewvan Drive. The City of Weyburn completed construction of a new bridge over the Souris River on Government Road. Twenty-two urban centres under 5,000 population received a total of $791,614 for street and traffic safety improvements. Seven communities received a total of $73,763 to develop, operate and maintain community airports.

One hundred communities were eligible for urban street maintenance under the Urban Assistance Program. The department provided $28,300 to the 42 communities that participated.

Other Activities

Highway safety and miscellaneous special construction improvements included improving subgrades with lime, improving roadway drainage, constructing loadometer sites, improving road information signs, and flattening approach sideslopes. In addition, 25 intersections were delineated with one or two street lights. Guardrail was installed at nine sites which included 14 highway bridges.

District staff successfully negotiated 109 property purchase and miscellaneous damage agreements.

District Winter Road Information Service (Hotline) received 13,000 telephone enquiries between November 1, 1983 and March 31, 1984. The hotline was operated at Regina, Weyburn and Moose Jaw.

Yorkton District

The Yorkton district is situated in the heart of the Parkland and is responsible for 3048 km of provincial highway system. Some of the activities carried out are listed below.

Design

The Design Section carried out 37.9 km of preliminary survey and 11.1 km of highway design during the fiscal year 1983-84.

Construction

Construction section staff supervised four grading and seven surfacing projects during the year which saw the completion of 37 km of subgrade construction and 78 km of surfacing. Only one grading and two surfacing projects were carried over into the 1984-85 fiscal year.

The major projects completed during the year were:

- Grading on highway 15 from junction No. 9 highway to Melville.
- Grading on highway 8 from Rocanville to 13 kilometres south.
- Surfacing on highway 15 from Punnichy to junction No. 6 highway.
- Lime drying and placement of a Pavement C structure on highway 23 from Weekes to Carragana.

A number of rehabilitation surfacing projects also were completed in the district which included:

- Salvaging and recycling asphalt concrete on Highway No. 22 from the junction of Highway No. 9 to Esterhazy and on Highway No. 16 from the junction of Highway No. 9 at Yorkton to four km east.
- Base surface rehabilitation on No. 9, 35 and 49 highways

The Moosomin scale site contract was supervised by Yorkton district. The grading and base work was completed at the new site, the asphalt concrete remaining to be placed in 1984-85.

During the year a start also was made on the regrading of a 40 km stretch of Highway No. 9 from the junction with Highway No. 55 (north of Hudson Bay) to the Manitoba Border. The first contract let on this stretch of highway realized the near completion of 11 km of grading.

Materials

Materials Section staff completed 190 km of grade hole drilling, 38 km of stratigraphy drilling, and 56.5 km of borrow pit testing for subgrade and surfacing design purposes.

Gravel location crews identified eight new sand and gravel deposits and re-tested eight existing department-owned pits. The searches verified an additional 625 000 m^3 of granular material.

Staff issued 100 permits to public institutions and private individuals who removed 169 210 m^3 of sand and gravel from department owned pits this year. District construction and maintenance activities used an additional 520 705 m^3.

Staff completed eight pavement designs totalling 137.5 km of highway.

Maintenance

Maintenance Section produced 70 400 t of bituminous mix and applied a seal coat on 420 km of highway surface. An average pavement performance rating of 5.9 was attained on oil treated sections.

The highway system maintained includes:

- 224 km of gravel surface
- 1105 km oil treated surface
- 1719 km paved surface
- 60 km of roadway within campgrounds and Provincial Parks

Other Activities

Highway safety improvements included installing pedestrian crosswalk lights at Langenburg and Churchbridge and a guardrail installation on Highways No. 23 and 38.

Saskatoon District

The Saskatoon district is centrally located in the southern half of the province, and comprises 2491 km of the provincial highway system.

Three highlights were recorded this year: On May 10, 1983, a delegation of six Yukon highway engineers arrived to observe summer maintenance activities. Unfortunately, the visit was marred at the outset by a late spring snowfall of 12 cm and zero visibility; Grading commenced on September 23, 1983 by Nemanishen Contracting Ltd. for the construction of approaches to a proposed new bridge over the North Saskatchewan River on highway 16 between Langham and Borden. In a period of 22 days in February, 1984, the contractor hauled 200 000 m^3 of earth across the river by means of an ice bridge. In this period 22,600 loads crossed the river by motor scrapers; This year saw the completion of regrading of a 59.30 km section of Highway No 21 between Kerrobert and Unity with the exception of minor trimming. This section was completely regraded over the last two seasons.

Design Section

This section carried out 77 km of field surveys and 29 km of subgrade design. A number of safety improvement projects were designed, including guardrail, intersection lanes and intersection lighting.

Functional designs for three interchanges in the environs of Saskatoon were completed.

Eleven communities were assisted financially under cost-shared programs for upgrading of transportation systems.

Construction Section

Eight contracts were supervised involving 44 km of subgrade construction; 16 km of asphalt mat on subgrade and 28 km of oil treatment.

Two communities were assisted through the Custom Work Program, and financial assistance was provided to upgrade one primary airport.

Maintenance Section

The section supervised two seal coat contracts and one contract for stockpiling bituminous mix.

A variety of improvements were carried out:

Deep Patching	8307 m^2
Lime Treatment of Subgrade	5 km
Thermo Patching of Pavement Depressions	31 km
Re-oiling	48 km
Seal Coat on Paved Highways	111 km
Seal Coat on Oiled Highway	177 km
Pavement Shimming	20 km
Stockpiling of Bituminous Mix	32 940 t
Seeding Right-of-way	89 ha
Installation of Security Fence	3140 m
Screening Aggregate for Ice Control	2120 t
Winter Maintenance	4250 t of sand 10 133 t of salt 40 t of CaCl

The Saskatoon Road Information Hotline handled 16,767 phone calls through the winter. This was a reduction of 38% from the previous winter due, no doubt, to a mild winter.

Maintenance costs were $7,319,089 of which $1,485,863 was for winter maintenance and $1,975,440 was for special maintenance projects.

Materials Section

This section completed the design of pavements for 14 projects to be paved in Swift Current and Saskatoon Districts. Many specialized investigations were carried out, including site investigations, terrain analyses, quality control and analyses for six pavement overlays. The Materials Engineer carried out a detailed stability analysis for the Muddy Lake Hill on Highway No. 21, and conducted three short seminars for in-house training.

Routine work in the two districts (1 and 4) included: 167 km of stratigraphic investigation, 153 km of preliminary soils investigation and 233 km of subgrade sampling for design purposes.

The Gravel Section tested six new deposits and retested 12 existing deposits. This work verified 273 000 m^3 of gravel and 65 000 m^3 of sand.

The District Testing Laboratory performed 11,683 individual tests on material samples.

Prince Albert District

The Prince Albert District is responsible for 4780 km of public and provincial highways. The district also is responsible for the maintenance and operation of the Uranium City and La Ronge airports, and for the maintenance of 10 gravel airstrips.

Design and Testing

Design staff completed 66 km of preliminary surveys and 60 km of final design during the year. Five detailed location studies also were completed.

Gravel location crews located three new gravel sources containing approximately 95 000 m^3 and six new sand sources containing approximately 300 000 m^3. This will result in considerable savings in future haul costs. Sixteen existing gravel sources were re-assessed, after use, to determine quantities remaining.

District lab staff provided test results on aggregates and soils for use by design and construction staff, and for the provision of information to contractors bidding on department work. Test results on 7,108 individual samples were completed.

Construction

During the year, 31 km of subgrade were constructed along with 31 km of pavement and 75 km of oil treatment.

Projects completed included grading and surfacing on Highway No. 378 south of Spiritwood, surfacing on Highway No. 6 south of Gronlid and Highway No. 3 east of Birch Hills; grading on Highway No. 106 north of Smeaton and oil treatment on Highway No. 106 in the vicinity of the Puskwakaw River. The surfacing projects on Highways No 3 and 6 both involved reclaiming and recycling existing asphalt surface. This relatively new technique was very successful and resulted in considerable savings in costs of asphalt required to produce the new hot mix bituminous surface.

Other projects administered by district construction staff involved oiling on various access roads and main streets, several spot improvements on the highway system, and the supervision of several special maintenance mixing, sealing and crushing projects.

Maintenance

The highway system maintained includes 2222 km of gravel, 1080 km of oil treatment and 1478 km of pavement.

A variety of improvements were carried out as follows:

Deep patching	33 000m^2
Seal coats	248 km
Clay capping	35 km
Dust Treatment	193 km

Summer maintenance was normal and the riding quality on oil treatment surfaces was improved from the previous year. During the winter months snowfall was near normal. Eighteen incidents of freezing rain were recorded with the worst situation occurring on January 2. Over 9000 t of salt were used to control icing conditions during the winter.

Other projects undertaken by maintenance staff included safety improvements such as slope flattening, guardrail and the installation of flashing lights. Landscaping projects included erosion control and seeding new rights-of-way.

District shop staff provided excellent service to repair and overhaul a fleet of approximately 600 units.

Other Activities

In addition to the normal administration duties, district administration staff processed 169 over-dimensional permits, 55 material requisitions, 148 gravel and sale of material invoices, 945 construction and maintenance material invoices, and 750 custom work and barge billings. Excellent results were again achieved in the area of processing accounts for payment in a timely manner.

A total of 10 communities participated in assistance programs that included Urban Assistance, Airport Assistance and Urban Traffic Safety.

Delineation lights were installed at seven different intersections and runway lights were upgraded at the Wollaston Lake airstrip.

Winter roads were operated from Cumberland House to Sturgeon Landing, and from Highway No. 905 to Wollaston Lake.

The Wollaston Lake barge operated from June 23 to October 14 making 225 crossings to the community of Wollaston Lake.

On September 1, 1983 the district took over the maintenance and operation of the Uranium City Airport. Maintenance is provided under a cost sharing arrangement with the Government of Canada.

North Battleford District

The North Battleford district is responsible for 4181 km of public and provincial highways along with eight provincial airports.

Design

Design section staff completed and updated the designs on 63 km of grading. Seven tender packages were completed.

Materials

Surfacing designs were completed on seven projects and check testing for quality control was carried out on the active construction projects.

Other work included:

- Lime sampling and testing on six projects.
- Approximately 225 000 m^3 of gravel and 450 000 m^3 of sand were located in 356 quarter-sections of land checked for gravel and sand.
- Seven existing gravel pits were re-tested and 50 re-surveyed.
- Completion of a geotechnical report on Highway No. 904 in the Waterhen-Flotten Lake area.
- Clay search in the Beauval, Patuanak and Pinehouse area.

Construction

During the year 86 kilometres of subgrade were constructed and 74.5 km surfaced including 28.6 km of hot mix pavement.

The district's construction work was administered through 18 contracts.

Major highway improvements were made in the northern communities of Ile a la Crosse and La Loche. Sidewalk, curb and surfacing were completed in Ile a la Crosse, and partially completed in La Loche.

Upgrading of the Yellowhead route between North Battleford and Lloydminster continued. This included the completion of shoulder widening on the section between Highgate and Delmas. Shoulder widening and minor relocation started on the section between Paynton and Maidstone.

Good progress was again made upgrading Highway No. 155 between Buffalo Narrows and La Loche. Grading was completed on this section of highway and 29.5 km of oil treatment surfacing was carried out.

Surfacing was completed on Highway No. 26 from north of Edam to south of Spruce Lake, and on a 3.6 km section of Highway No. 17 in the vicinity of Dillberry Lake Park. Major surfacing was undertaken on Highway No. 14 from Unity to 42 km west on Highways No. 31 and 51 in the vicinity of Kerrobert, and on Highway No. 21 from Kerrobert to 35 km north.

Oil treatment surfacing was completed on Highway No. 376 from Maymont to the junction of Highway No. 40 and on the access road from Livelong to Blatz-Nolin.

Subgrade construction was completed on Highway No. 165 east of Beauval and on Highway No. 925 from Dillon to Michel. Subgrade construction started on Highway No. 55 west of Meadow Lake.

Spot grading improvements were completed on Highway No. 224 in the Meadow Lake Provincial Park and on Highway No. 21 south of Pierceland.

Maintenance

The highway system maintained by district forces include:

- 2042 km of gravel surface.
- 1018 km of oil treated surface.
- 1101 km of paved 2-lane surface.
- 20 km of paved 4-lane surface.
- 68 km of roadways in campgrounds and provincial parks.

Maintenance is provided with 30 section crews and six special crews located in 27 communities.

District shop staff provided excellent service to repair and overhaul a fleet of approximately 350 units.

Two surface rehabilitation projects on Highway No. 4 south of Meadow Lake and Highway No. 55 west of Green Lake were completed to repair and upgrade these sections.

Maintenance forces used 11 184 000 L of liquid asphalt, 351 700 t of processed aggregate and 32 300 t of bituminous mix.

The district tendered the crushing and stockpiling of 27 000 t of traffic gravel and 174 600 t of bituminous repair aggregate. In addition 50 000 t of bituminous mix was tendered.

A new section maintenance headquarters building was completed in Glaslyn.

The North Battleford Road Information Service (Hotline) handled 3,080 phone calls throughout the winter.

The major traffic detour during the resurfacing of the Battlefords' Bridge was the highlight of the year. The excellent planning, organization and implementation resulted in the smooth flow of traffic during the three-month construction period.

Other Activities

A total of six communities participated in assistance programs that included Urban Assistance, Airport Assistance, and Urban Traffic Safety.

Delineation lights were installed at seven intersections.

Miscellaneous special construction projects included the construction of a loadometer site on Highway No. 303 1 km east of the junction of Highway No. 21, the construction of turnout areas on the Cluff Lake Road and the obliteration of old highway grades at various locations.

Safety improvements included the flattening of approach slopes on Highway No. 40 west of Blaine Lake, on Highway No. 16 in the vicinity of North Battleford, and on Highway No. 14 between Wilkie and Unity. Other projects included the installation of guardrail at three locations and the clearing of brush at one location to improve sight distance.

In the area of tourist facilities, the campsite and parking lots at Greig Lake were surfaced.

Under the landscaping program various depleted gravel pits throughout the district were landscaped.

Construction Accomplishments in 1983-84

Control Section	Location	Grading	Surfacing							
		Completed	Under construction	Pavement "A"	Pavement "B"	Pavement "C"	Pavement "D"	Rubber Asphalt	Rehabilitation	Paving – under construction
1-01	Manitoba Border - W. Jct. 8 (Moosomin)	0.66		0.66						
1-01-30	Moosomin Scale Site	2.00								2.00
1-05	E. Jct. 47 (Grenfell) - Jct. 56 (Indian Head)		6.43							
1-06	Jct. 56 (Indian Head) - W. Jct. 35 (Qu'Appelle)	10.22	5.71							
1-10-42	Lewvan Drive (Regina)	8.52								8.52
1-19	Jct. 32 - Jct. 37 (Gull Lake)			28.06						
1-19-13	Access to Prairie Wildlife Centre					0.40				
1-20	Jct. 37 (Gull Lake) - Sidewood							17.32		
1-21	Sidewood - Jct. 21							17.65		
2-19	Jct. 11 - N. Abut. Diefenbaker Br. (Prince Albert)							8.72		
2-19-08	Service Roads South of Prince Albert					1.49				
2-24	N. Jct. 165 - La Ronge (Brown St.)								4.49	
3-04	Prairie River - S. Jct. 23 (Crooked River)	0.45							0.90	
3-08	Kinistino - Jct. 25 (Birch Hills)							7.32	9.21	
3-11	N. Jct. 2 (Prince Albert) - Jct. 55 (Shellbrook)							9.33		
3-16	N. Jct. 4 (Glaslyn) - E. Jct. 26 (Turtleford)					0.08				
3-16-40	Jct. 3 - Blatz Nolin						8.10			
4-08	S. Jct. 44 (Elrose) - Jct. 7 (Rosetown)	0.25		0.25				5.15		
4-17	N. Jct. 3 (Glaslyn) - E. Jct. 55 (Meadow Lake)								6.48	
5-07-08	Service Road at Humboldt	0.45								
6-04	N. Jct. 39 (Corinne) - Jct. No. 1 (Regina)	3.52		17.28						
6-04-08	Service Road to Cinema 6 Drive-In (Regina)					0.63				
6-08	Jct. 22 (Southey) - N. Jct. 15 (Raymore)							12.97		
6-11-08	Service Road at Naicam	0.17								
6-13-08	Service Road South of Melfort	0.42								
6-14	N. Jct. 3 (Melfort) - Jct. 335 (Gronlid)				12.14					
6-15	Jct. 335 (Gronlid) - Jct. 55 (Choiceland)						6.86			

Control Section	Location	Grading		Surfacing							
		Completed	Under construction	Pavement "A"	Pavement "B"	Pavement "C"	Pavement "D"	Rubber Asphalt	Paving – Rehabilitation	Paving – under construction	
7-05	Jct. 4 (Rosetown) - Jct. 30								14.06		
8-05	W. Jct. 1 (Moosomin) - Qu'Appelle River	12.86									
9-01	U.S. Border (Northgate) - W. Jct. 18	8.94									
9-03	W. Jct. 13 (Carlyle) - N. Jct. 48									6.40	2.00
9-08	Jct. 15 - Jct. 10 (Yorkton)									13.00	
9-09	Jct. 10 (Yorkton) - N. Jct. 5 (Canora)								16.70		
9-13	Usherville - Jct. 23 (Bertwell)			5.70							
9-15	E. Jct. 3 (Hudson Bay) - Manitoba Border		5.30								
11-02	Jct. 20 (Lumsden) - Jct. 354 (Bethune)	8.71							5.94		9.50
11-03	Jct. 354 (Bethune) - E. Jct. 2 (Findlater)								3.60		
11-11-43	Jct. 11 - Blumenheim							11.39			
11-11-44	Jct. 11 - Blumenthal							5.66			
11-13	Jct. 212 (Duck Lake) - Jct. 2								10.47		
12-03	Jct. 40 (Blaine Lake) - NE Cor. 34-47-8-3							10.98			
13-01	Manitoba Border - Jct. 8 (Redvers)	13.96			19.41						
13-01-40	Jct. 13 - Antler	1.19				1.19					
13-01-41	Jct. 13 - Bellegarde	0.90						0.90			
13-11	N. Jct. 2 (Assiniboia) - E. Jct. 58 (Lafleche)				19.05						
13-18	W. Jct. 21 (Govanlock) - Alberta Border							14.53			
14-17	Jct. 29 (Wilkie) - Jct. 21 (Unity)								2.35		
14-18	Jct. 21 (Unity) - NE Cor. 32-39-25-3			12.89	5.57						3.53
14-19	NE Cor. 32-39-25-3 - Alberta Border				4.30						2.00
15-03	Jct. 9 - Jct. 10 (Melville)	7.73									
15-06	Jct. 35 (Leross) - S. Jct. 6				15.99						
16-11	Manitoba Border - W. Jct. 8 (Churchbridge)									0.27	
16-12	W. Jct. 8 (Churchbridge) - Jct. 9 (Yorkton)									4.57	
16-13	Jct. 10 (Yorkton) - Jct. 47 (Springside)								11.96		
16-23	N. Jct. 11 (Saskatoon) - Borden Bridge		2.78								
16-24	Borden Bridge - Jct. 340 (Radisson)		0.60								
16-27	S. Jct. 4 (Battleford) - Bresaylor			9.65							
16-28	Bresaylor - Jct. 21 (Maidstone)	15.02		16.60							6.63
16-29	Jct. 21 (Maidstone) - Marshall								3.90		
16-30	Marshall - Jct. 17 (Lloydminster)								15.44		
17-03	Jct. 14 - W. Jct. Alberta 14			3.60							
18-04	Jct. 47 (Estevan) - Jct. 350 (Torquay)				14.91						
20-01	Lumsden - Jct. 22	0.37		0.37							
21-03	E. Jct. 13 - Jct. 221 (Cypress Hills)	0.24									
21-04	Jct. 221 (Cypress Hills) - Maple Creek	26.52									
21-12	E. Jct. 51 (Kerrobert) - Jct. 14 (Unity)	39.14			21.48						
21-12-40	Jct. 21 - Tramping Lake	1.85									
21-18	Makwa Lake Grid - Jct. 55 (Pierceland)	10.02									
22-02	N. Jct. 8 - E. Jct. 9 (Stockholm)									14.14	
23-01	Jct. 9 (Bertwell) - Somme					6.49					
23-02	Somme - Jct. 38 (Chelan)					8.40					
26-02	Meota - S. Jct. 3 (Turtleford)				6.22						
28-02	Jct. 377 (Radville) - Jct. 13	0.63			0.63						
31-03	W. Jct. 21 (Kerrobert) - Salvador				0.80						
35-02	Jct. 18 (Oungre) - Colgate					16.98					
35-03-41	Jct. 35 - Goodwater						11.06				
35-09	Jct. 22 (Lipton) - Jct. 15 (Leross)									8.09	

Control Section	Location	Grading	Surfacing								
		Completed	Under construction	Pavement "A"	Pavement "B"	Pavement "C"	Pavement "D"	Rubber Asphalt	Rehabilitation	Paving – under construction	
35-15	Jct. 3 (Tisdale) - Jct. 335								19.63		
35-16	Jct. 335 - S. Jct. 55 (Nipawin)								11.20		
47-02	W. Jct. 39 (Estevan) - Jct. 13 (Stoughton)				21.11					5.94	
48-02	Jct. 8 (Fairlight) - S. Jct. 9					1.61					
48-03	N. Jct. 9 - Jct. 47 (Kegworth)	2.34									
48-04	Jct. 47 (Kegworth) - Jct. 35	9.33	4.80								
49-02	E. Jct. 8 (Pelly) - E. Jct. 9									6.82	
51-03	W. Jct. 21 (Kerrobert) - Major				1.40						
55-14	Jct. 155 (Green Lake) - E. Jct. 4 (Meadow Lake)									9.71	
55-15	E. Jct. 4 (Meadow Lake) - S. Jct. 26	13.36									
56-03	Jct. 35 (Fort Qu'Appelle) - Jct. 210				0.58						
60-01-10	Pike Lake Provincial Park						0.70				
102-25	La Ronge - Nemeiben River									0.60	
106-01	Jct. 55 (Smeaton) - Jct. 120	26.83									
106-03	Jct. 165 - E. of Deschambault						38.76				
120-01-10	Jct. 120 - Candle Lake Resort		3.93								
123-01	Jct. 55 - Squaw Rapids	3.49									
155-03	Buffalo Narrows Bridge - La Loche	20.77		1.36			29.50				
210-01	Jct. 35 (Fort Qu'Appelle) - Jct. 56			0.20							
210-02	Jct. 56 - Jct. 10				12.12						
224-01	Jct. 4 - Jct. 26 (Goodsoil)	2.60									
224-01-11	Greg Lake Campground (Meadow Lake Prov. Park)						2.14				
261-01-11	Bearpaw Campground (Sask. Landing Prov. Park)	0.37					1.72				
303-01	Jct. 26 (Turtleford) - Jct. 21					0.08					
312-01	Jct. 2 (Wakaw) - Jct. 11 (Rosthern)	7.75				16.01					
322-01-42	Jct. 322 - Silton						0.09				
332-01	Jct. 32 - Hazlet	1.89					1.89				
349-01-40	Jct. 349 - St. Front						8.77				
376-04	Jct. 16 (Maymont) - Jct. 40						17.96				
378-02	Rabbit Lake - Jct. 3 (Spiritwood)	18.54					18.54				
908-01	Jct. 155 - Ile-a-la-Crosse	0.95		0.95							
925-01	Jct. 155 - Dillon	1.03									
925-02	S. of Dillon - Michel	22.20									
	District No. 1	70.26		28.31	23.68	0.40	18.14	54.18			
	District No. 2	71.29	16.94	18.51	87.81	20.41	12.05	22.51	12.34	22.02	
	District No. 3	20.59	5.30	5.70	15.99	14.89		28.66	46.89		
	District No. 4	8.37	3.38			16.01	26.52				
	District No. 5	49.73	3.93		12.14	1.49	75.14	66.67	15.20		
	District No. 6	85.95		45.05	16.09	0.16	57.70	21.69	16.19	12.16	
	Provincial Total	306.19	29.55	97.57	155.71	53.36	189.55	193.71	90.62	34.18	

Construction Key

Control Section — A permanent unit of the highway system which becomes the basic reporting unit for construction and maintenance costs, service life characteristics, and various other data.

Grading — Completed — Grading completed within the year being reported.

Grading — Under Construction — The under construction portion of the project which is being carried over to be done in the next constructing season.

Rehabilitation — Work such as pavement resurfacing, carried out to restore a roadway to the standard to which it was constructed. This is warranted when maintenance operations are no longer adequate or appropriate. Differs from upgrading in that the design standard is not improved.

Pavement "A", "B", "C" and "D" — Represents different types of surfacing structures.

Oil — Oil treatment. Cold asphalt mix surface treatment of nominal thickness.

Rubber Asphalt — An application of rubber asphalt binder followed by a cover coat of aggregate.

Surfacing — Under Construction — The paving portion of the project which is being carried over to be done in the next construction season.

Engineering Division

The Engineering Division is responsible for the development of standards for design, construction and maintenance of the provincial highway system. Certain programs such as pavement marking and the administration of vehicle weight and dimension permits also fall under the jurisdiction of this division.

A major organizational change was carried out in the division at year end. Research Branch was moved from the Engineering Division to a newly created Transportation Planning and Research Division. Close inter-divisional ties will remain to ensure a high involvement of research in solving engineering problems related to transportation.

A major assessment program was carried out during the past year to determine appropriate replacement equipment which will provide objective measures of highway network riding quality. The existing equipment has reached the end of its life and technology changes will allow for improved systems of obtaining riding quality data.

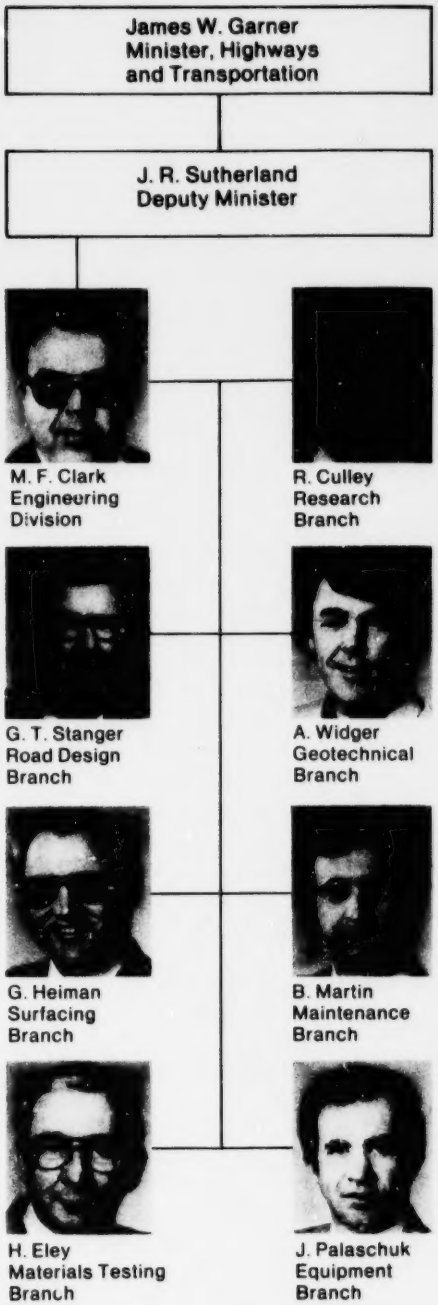
Alternatives to bitumen based prime coats and dust palatives were under assessment with some indication of successful alternatives being indicated. Prime coats are a waterproofing layer placed on granular base courses prior to the construction of gravel seal coats or asphalt surfaces.

The use of aerial photogrammetric survey techniques was evaluated on a trial project to determine the feasibility of utilizing these techniques rather than the traditional methods of surveying. The department also assessed and acquired some electronic survey equipment which will increase the productivity of traditional highway design and construction survey methods.

High priority has been placed on the development and implementation of management information systems. During the year an equipment management information system was put into place to provide an improved management tool to administer the department's equipment fleet. Initial work was commenced to define the department's needs for an information system to manage and optimize expenditures on the paved highway network. This tool will provide for an improved method of projecting highway rehabilitation needs and allow program optimization.

A new high speed pavement marking machine was designed and constructed under the supervision of this division. It was brought into service during the 1983 season and its productivity exceeded initial design projections allowing program accomplishment with reduced resources.

A major geotechnical assessment was carried out to provide design parameters for the construction of a new bridge and valley approaches on Highway No. 16 where it crosses the North Saskatchewan River near Borden.



M. F. Clark
Associate Deputy Minister (Engineering)

Road Design Branch

The following are the major responsibilities of Road Design Branch:

- Develop and update design standards.
- Review geometric and drainage designs.
- Review highway lighting design.
- Prepare and update manuals pertaining to design activities.
- Provide advice and guidance on all matters pertaining to geometric design, culvert and highway lighting designs.
- Develop standards and policy pertaining to roadside development and to direct roadside development permit operations.
- Operate the department's air photo library.

Manuals

Metrication of design standards continued throughout the year. Updating the Design Manual to metric standards is now almost complete.

Safety

Standards relating to highway safety continue to be given high priority. Accident data is a significant consideration in the development of highway design standards.

Air Photo Library

Library staff acquired 1385 km of photography and 474 mosaic sheets.

Development Permits

A review of our existing development standards began this year and should be completed in the coming year. Approximately 375 subdivisions were reviewed and 320 permits were issued.

Other Activities

The branch purchased electronic distance measuring equipment for use by district personnel. This equipment should increase field survey productivity.

The branch, in co-operation with Saskatoon District, carried out a highway design using photogrammetry.

In addition, the branch initiated a study this year on the use of computer graphics for highway design. This study should be completed in the upcoming year.

Equipment Branch

Equipment Branch is responsible for managing the department's fleet of equipment. Staff in the branch are responsible for reviewing and updating policies, procedures and standards related to equipment operation and maintenance.

Equipment Fleet

The department's current fleet consists of 2,854 units. This includes trucks, tractors, graders, mowers, compactors, sweeper brooms, trailers, camp equipment and heavy construction equipment, the majority of which is used to maintain the highway system.

Fleet Operation

The cost of operating the department's equipment for the year was $20.9 million. Repair costs were $6.5 million; fuel and other operating costs $5.8 million; ownership costs were $4.4 million and $4.2 million was spent on licences and administration.

Equipment Purchases

In 1983-84, $2.3 million was expended on new equipment acquisition. The current capital cost of Saskatchewan Highways and Transportation's equipment fleet is $61.1 million. A total of 92 requisitions were raised to purchase major equipment, support equipment, shop equipment and tools.

Rental Rates

Equipment Branch sets rental rates for equipment that is used on an hourly basis on highway construction projects. These rates are used as a guideline by the construction and roadbuilding industry. The rates were distributed to 250 contractors, equipment dealers, trucking firms, towns, cities and other government departments and agencies.

Rental rates for department owned equipment were calculated on a provincial basis. These rates are set to recover the costs of owning, operating, repairing and administering the department's equipment fleet.

C.V.A. Fleet and Mobile Radios

Equipment Branch administers the Central Vehicle Agency (C.V.A.) units within the department and the mobile radio communication system.

In 1983-84, the Highway Traffic Board, the Transportation Agency and the Transportation Policy unit of Agriculture were integrated within Saskatchewan Highways and Transportation.

These branches increased the number of full maintenance C.V.A. units to 320. The total kilometres driven in the year were 9.1 million.

The conversion of the department's mobile radio communications system from a single frequency to a four frequency radio telephone network was completed this year. In total, the department uses 845 mobile radios. These mobile radios provide over 95% coverage of the provincial highway system.

Research and Testing

The department completed testing of a unit fueled by compressed natural gas (CNG). The results of the testing indicate that vehicles fueled by compressed natural gas are not practical for highway use. Lack of fueling facilities, short driving range and large space required for the fuel tanks are the main drawbacks.

Twelve department-owned units are being used in a propane fuel test program. Test data has been compiled for 20 months of the 24-month test program.

Equipment Management System

The users are now familiar with all of the input requirements of the system.

Timely information will be supplied to the users which will help them to make better decisions on managing their equipment.

Surfacing Branch

The mission of Surfacing Branch is to provide expert knowledge in transportation pavement design, construction and maintenance (techniques and materials) and to provide central unprocessed gravel resource management, to provide for the efficient and cost effective management and operation of a multi-modal transportation system for the province of Saskatchewan.

Pavement Management

A study was completed to evaluate what changes should be made to improve the management of pavements in the province. This study has made recommendations to implement a Pavement Management Information System over the next six years.

The annual rehabilitation program was developed to rehabilitate 544 km of the highway system. The branch evaluates 1000 km of highway throughout the province with district staff to develop the rehabilitation programs. The program consists of seal coating, spot improvements, recapping and recycling asphalt concrete.

The pavement rehabilitation will be an increasing proportion of the departments efforts as the highway system is maturing and road transportation requirements are increasing.

Standards and Policy

The branch continues to monitor standards and policies to incorporate new materials and procedures into pavement construction and maintenance.

Field trips and test sections were built using calcium and sodium lignosulphates for priming. These trials were successful and further use will be evaluated.

A test section using Tensor, a reinforcing material, was built to evaluate whether it could be used to strengthen subgrades under thin pavements. This application for Tensor resulted in an unexpected problem which makes it unsuitable for this application.

Asphalt Concrete Recycling

Recycling has become a common alternative in the rehabilitation program. The implementation of recycling has gone smoothly for department staff and contractors alike.

Maintenance Branch

The highway system maintained by the department in 1983-84 was 23 186 km. This total includes 8596 km of staged or full pavement, 1101 km of light pavement, 8827 km of oil treatment and 4661 km of gravel road. The department also maintains 363 km of tourist facility roads and sites. Of the department's 18 525 km of asphalt surfaced highways, less than 48% are subject to spring bans.

The 1983-84 maintenance expenditure of $75.5 million represented an 8% increase over the previous year. The 1982-83 figure includes funds previously allocated under the Department of Northern Saskatchewan. The major portion of the increase was for northern highways. The riding comfort objective was 5.4 for oil treatment structures; the department was able to exceed this slightly with an actual value between 5.5 and 5.6.

Twenty-five sections in the Maintenance Policy and Standards Manual were added or revised. The Maintenance Practice and Procedures Manual had 30 sections added or revised. The branch worked with the districts and Management Services Branch to develop a revised Maintenance Management Information System. Implementation of the system, using electronic remote data entry from the area offices, began late in the year.

Pavement Marking

The department striped 22 327 km of centreline and 16 179 km of shoulderline. This represents approximately 1500 km above the objective and 2500 km above the previous best year. This was accomplished within the budget allocation using less manpower hours and less equipment hours. For the third consecutive year the department was able to set a monthly production record by striping 7470 km during August. Use of the new large high-speed striper was quite successful with excellent production and minimal downtime.

Weights and Dimensions

Several major changes were made to the regulations establishing vehicle weights and dimensions allowed on public highways. The winter weight provision in the regulations was extended to include municipal roads as requested by the rural municipalities. This allowed farm vehicles to haul significantly larger loads of grain during the winter without increasing the damage to the road system. This change also will increase the transportation efficiency and productivity of other commodities that move in winter such as fertilizer and gravel.

The allowable length for semi-trailers was increased from 14 m to 14.6 m. This makes the province uniform with the United States and most other Canadian provinces. The reference to a tire's load rating was removed from the regulations and reference to a maximum loading per unit width of tire was restored. This change was part of the revisions intended to simplify the regulations.

During 1983-84 a total of 32,743 permits were issued for overweight and overdimension loads. This represents an increase of 19% over the previous year and a 6% increase over the previous five year high. Of this total, 22,066 were issued directly by the permit section. Another 8,041 were issued by the Central Permit Office and 2,636 were issued by the district offices and traffic officers. Staff from the permit section assisted in the training of the Central Permit Office staff regarding the issuance of weight and dimension permits.

The number of annual permits remained relatively constant; however, the number of permitted hauls under agreement with the government continued to increase. Those permits are for items such as potash, timber, cement, sulfur, and overlength combination vehicles. The number of permits for mobile homes increased slightly over previous years. The units being transported show a general increase in size leading to increased requirements for traffic accommodation.

The department took several initiatives to help improve the public knowledge and understanding of weight and dimension regulations. A pamphlet explaining the traffic accommodation requirements for overdimension loads was developed and distributed throughout the transportation industry. Development of a pamphlet to explain the regulations themselves also was begun. In March a presentation was given to the annual convention of the Saskatchewan Association of Rural Municipalities to help explain weights and dimensions on municipal roads.

Other Highlights

The department continued to expand its use of liquid calcium chloride sprayed onto de-icing salt or sand. This improves the effectiveness of the ice control measures and reduces the potential pollution problems.

Geotechnical Branch

The major responsibilities of the branch are development of geotechnical standards for subgrade construction, site investigations for major valley crossings, provision of technical advice to other units in the department and coordination of the department's environmental and archaeological submissions.

Standards and Policies

Work continued on a study related to geotechnical standards and policies with special emphasis placed on geotextiles and select subgrade layers. A Geotechnical Pre-Engineering Report was developed and implemented.

Site Investigations

The site investigation of the new Borden Bridge was completed. The abutment fills were placed and monitored with the instrumentation installed. Site investigations require test drilling, sampling of soils, testing of soil properties and engineering designs.

Monitoring of the abutment fills at the proposed Meridian Bridge on Highway 17 was continued.

Site investigations were completed on a number of small bridge sites.

A joint site investigation research program with the University of Saskatchewan was continued to provide a geological-geotechnical framework for future construction along the North Saskatchewan River.

Staff Training

The branch continued its role in providing technical training to staff in other branches and divisions.

Environmental Liaison

Geotechnical Branch continued its role of acting as the department's official liaison with the Department of Environment. This involves a compilation of the department's capital grading program for submission to the Department of Environment for environmental approval. The long range program also was submitted to obtain classifications for all grading projects. The branch also reviewed and provided comments on environmental legislation or guidelines.

As the official liason with the Department of Culture and Recreation on archaeological concerns relating to the capital program, the branch submitted and received approval for the current projects as well as working on the long range program.

Materials Testing Branch

More than 13,500 tests were conducted in the central laboratory to evaluate materials for highway design, construction, performance and research. The lab continued a study into methods of predicting stripping in asphalt pavements and in rubber modified asphalt seal coats. Several additives were evaluated for improving durability. A study also was continued into causes of hardening of maintenance asphalt mix stockpiles. A ligno sulfonate bi-product of pulp manufacturing also was tried, with some success, as a base course prime coat. Testing services were also provided to the Department of Rural Affairs for bridge foundation analyses. In addition, six coring machines and 93 field testing laboratories provided on-the-job testing. Three of these units were provided to the Department of Municipal Affairs. Forty-five portable nuclear density meters, one borehole meter and four asphalt meters were serviced and calibrated for construction project use. A study of pavement and sub-grade soil bearing strengths was continued using a dynamic vibratory system.

A total of 45 000 km of paved and oil treated surfaces were tested with car road meters to assess riding quality. The tests aid in maintaining appropriate levels of riding comfort on various highway systems.

Benkelman beam deflection tests were conducted on 1700 km of pavements at 12 800 individual locations. The tests aid in determining load carrying capacity of pavements and in designing pavement structures. Skid tests were performed on major bridge decks and overpasses and several sections of provincial highways to detect potential slippery areas.

A rotary drill bored a total of 3600 m of test holes to investigate foundation and slope stability conditions for bridge and valley crossings and to provide instrumentation during construction. Sites include bridges or valleys near Hudson Bay, Borden, Muddy Lake, Armley and on the Hansen Lake Road. Further geotechnical work also was carried out along the North Saskatchewan River in the areas of Maymont and Petrofka in conjunction with the University of Saskatchewan. Carbon dating of wood samples obtained at these sites provided significant new

geological information as to the sequence of in-filling in these valleys. Our drilling barge, which is the only unit in the province equipped for such work, was used to complete borehole testing for the Saskatchewan Power Corporation on the Saskatchewan River at the Nipawin Dam site.

Branch staff provided supervisory assistance for several construction projects including asphalt mix designs on the expanding recycled pavement projects. Additional emphasis was placed on materials schools for training of maintenance staff.

Materials section staff continued several long-term research projects during 1983-84, including studies on the performance of staged and "thin" pavements; pavements with sulphur or rubber; ash from coal-fired power stations; thin overlays on badly-cracked pavements and rubberized crack sealants.

Field installations of large diameter plastic culvert pipe indicated this material would be a useful alternative to conventional metal or concrete pipe in certain locations.

The pavement test track was used for testing the structural equivalency of lime modified Regina clay before and after freeze-thaw cycling. Data will be used to improve design methods for thin pavements on expansive clay subgrades.

Transportation Section

The transportation section continued its research into design concepts for roadway illumination and for safety barriers. Projects on improving the visibility of snow plows to motorists and on more durable traffic markings were continued.

A major study of the cost effectiveness of equipment usage by department units is continuing.

The effect of inlet geometry on culvert hydraulics was studied. Findings indicated a retrofit of an enlarged inlet section would increase the overall capacity of a culvert significantly and inexpensively. It also would permit use of smaller diameter pipe at many locations.

Other Activities

The branch maintained active membership in national and international technical societies. The director continued to serve on the Transport Canada Highway Research and Development Advisory Board and was elected Chairman of the Roads and Transportation Association of Canada Council on Cooperative Research.

Branch staff issued four technical reports, attended five out-of-province conferences and served on steering committees of three multi-provincial research projects.

Research Branch

Transportation Planning and Research Division

Formerly Policy, Planning and Development Division

The initial year of operation for the Transportation Planning and Research Division was 1983-84 under its former name Policy, Planning and Development Division. The division has brought into the Department of Highways and Transportation, the functions of the transportation policy unit of the Department of Agriculture and the Transportation Agency of Saskatchewan. The division also is responsible for identifying and assessing current and long range transportation demands, and for developing, recommending and monitoring capital policies and programs of the department. Beginning in 1984/85 the division will be responsible for the co-ordination and provision of technical research required by the department.

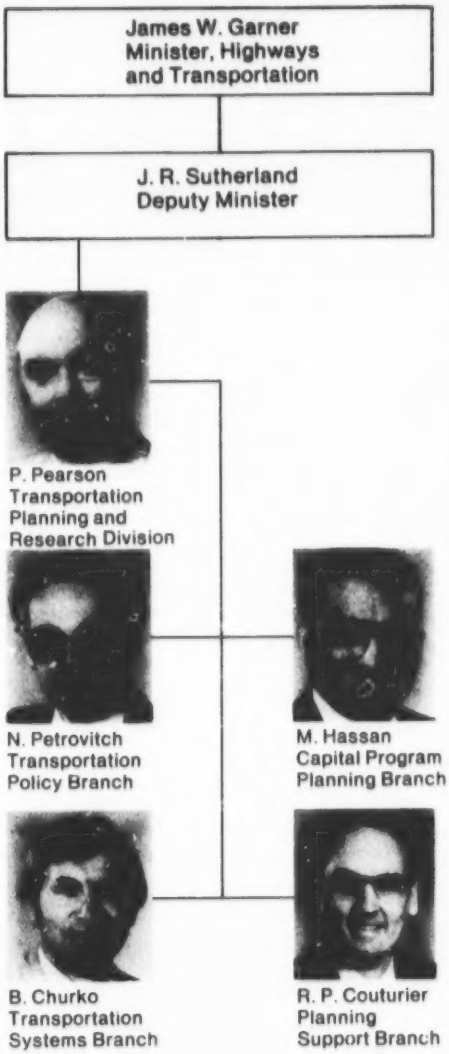
For consistency with future annual reports, the work accomplished by the various branches in the 1983/84 fiscal year is presented under the heading of Transportation Planning and Research Division.

The mission of the new division is outlined as follows:

- Formulate policies and programs for the purpose of developing improved transportation systems for the province and to plan for a safe, efficient integrated multi-modal transportation system.
- Prepare appropriate initiatives, interventions and responses to further the best interests of Saskatchewan transportation users.
- Provide information and specialized technical assistance concerning transportation to other departments and agencies of the provincial government, and to communities, carriers, and transportation users within the province. This includes the development, implementation and monitoring of policies and practices with respect to the movement of dangerous goods by road.
- Arrange for the co-ordination and provision of technical research required by the department.

In the coming years, the Transportation Planning and Research Division will operate with five distinct Branches which are:

Transportation Policy Branch
Transportation Systems Branch
Capital Program Planning Branch
Planning Support Branch
Technical Research Branch



Work which in the future will be carried out by the Planning Support Branch and the Capital Program Planning Branch is not identified separately in this annual report; it is presented as part of the Planning Branch. Accomplishments of the Technical Research Branch for 1983/84 are reported under Engineering Division.

Philip Pearson
Division Head
Transportation Planning and Research Division

Transportation Policy Branch

The mission of the branch is threefold:

- To formulate transportation policies for the purpose of developing improved transportation systems and services in support of the economic and social development of Saskatchewan.
- To provide information and expertise regarding extra-provincial legislation and regulations and inter-governmental transportation relations.
- To consult with and provide information and assistance to other government departments and agencies to Saskatchewan communities and to transportation users and carriers.

During the 1983-84 fiscal year close contact was maintained with federal and provincial agencies dealing with transportation matters. Activities included meetings and joint sponsorship of several studies and are described below by transport mode.

Rail

Grain Freight Rates

The branch prepared the Saskatchewan government submission on grain freight rates to the Standing Committee on Transportation. The branch also monitored the amendments to the Federal government's Bill C-155, the Western Grain Transportation Act.

Capacity Studies

The branch was actively involved as a participant and co-sponsor of several rail studies. These were the Vancouver Rail Access Study which identifies the extent and timing of potential future rail capacity shortfalls within the Vancouver area to 1990 and the Thunder Bay Rail Access Study which identified the probable future demands to be made on the rail system to 1990.

A study to investigate the opportunity for joint use of tracks by Canadian National Railway and Canadian Pacific Railway between Kamloops and Mission, British Columbia in the Fraser and Thompson River canyons has been agreed to.

Hearings

The branch prepared an intervention to the Canadian Transport Commission (CTC) hearing held in Prince Rupert on May 10, 1983 at the request of Saskatchewan Wheat Pool and in support of Prince Rupert Grain Ltd.'s application requesting that Canadian National Railway provide a receiving and distribution yard to service the grain terminal at Ridley Island.

Branch Lines

Throughout fiscal year 1983-84 the CTC issued a number of decisions on the future of branch lines in Saskatchewan. Through this period, the branch was active in providing technical assistance to support railway retention committees and in preparing the government's position, through interventions to the Rail Transport Committee. See following tables for details.

Lines Abandoned in Saskatchewan Pursuant to Canadian Transport Commission's Orders in period April 1, 1983 to March 31, 1984

Subdivision	Miles	Point to Point	Date Abandoned
CN Bodo	11.2	Cactus Lake to Bodo, Alberta	Dec. 31/83
CN Cudworth	16.9	St. Louis to Mileage 103.25	Nov. 30/83
CP Kelfield	28.5	Brass to Kelfield	Oct. 31/83
CP Melfort	25.4	Keddy (Melfort) to Lac Vert	July 20/83

Canadian Transport Commission Decisions Authorizing Abandonments in Period April 1, 1983 to March 31, 1984

Subdivision	Miles	Point to Point	Date of Order	Effective Date of Abandonment
CN Avonlea	21.5	Parry to Avonlea	Nov. 28/83	Aug. 31/85
CN Central Butte	45.6	Moose Jaw Jct. to Mawer	May 24/83	Aug. 31/87
CP Fife Lake	17.7	Coronach to Big Beaver	Apr. 5/83	Aug. 31/84
*CN Preeceville	40.8	Preeceville to Kelvington	July 26/83	Aug. 31/87
CN Rhein	13.0	Ross Jct. to Hampton	Apr. 14/83	Aug. 31/87

*Decision is currently under review by Canadian Transport Commission, Western Division

Canadian Transport Commission Decisions Authorizing Retention Period April 1, 1984 to March 31, 1984

Subdivision	Miles	Point to Point	Notes
CN Chelan	12.9	Reserve to Weekes	Order retained subject to further review

Lines Under Review by the Canadian Transport Commission as of March 31, 1984

Subdivision	Miles	Point to Point	Notes
CN Erwood	49.2	Hudson Bay to Baden, Man.	Hearing held April 21, 1983. Decision pending.

Rail Passenger

The branch continues its efforts to work for an improved and efficient rail passenger service to Saskatchewan. The branch has spent considerable time in promoting the need for rail passenger service following the rail passenger cutbacks in November, 1981.

Marine

Canada Ports Act

The branch began a new series of activities in the marine area in 1982-83 as a result of discussions with the Federal government and the passage of their new Canada Ports Act. The branch closely monitored the implementation of this Act during 1983-84.

Churchill

The branch director is an ex-officio member of the Port of Churchill Development Board. The Board is jointly supported by the three prairie provinces and its objective is to increase utilization of the Port of Churchill.

Air

Air Services

The branch is involved in a wide variety of activities intended to improve and expand air service to Saskatchewan residents.

Discussions are carried out on an ongoing basis with officials of Air Canada, Pacific Western Airlines, C.P. Air, Norcanair and other carriers providing service to the province.

During 1983-84 the branch was involved with a number of issues affecting service to Saskatchewan. These included the following:

- Developed the government's intervention concerning Norcanair's application to provide a new air service servicing Saskatoon, North Battleford, Lloydminster and Edmonton, Alberta. The minister presented the government's intervention on this matter at the Air Transport Committee public hearing held in Saskatoon on March 14, 1984.
- Monitored the $35 million improvements being made at the Regina Airport, including major renovations to the Air Terminal Building. Completion of this project is expected late in 1986.
- Developed and prepared the government's submission presented by the Minister of Highways and Transportation at the Canadian Transport Commission's Air Pricing Hearing held in Regina on March 29, 1984. This matter has received considerable public interest concerning both lower Canadian fares and federal government suggestions of possibly deregulating the Canadian Air Industry. The branch will continue to be active in this area.

Transportation Systems Branch

The mission of the branch is:

- In conjunction with industry, other private sector organizations and other groups within the division, the department and other government agencies, to prepare recommendations for policy and program development, and to initiate other steps leading to improvements in the safety, cost-effectiveness and adequacy of transportation systems and related technology of concern to the Government of Saskatchewan and transportation users in the province, particularly with regard to the movement of bulk commodities.
- To provide expertise and information on transportation technology and transportation systems analysis and development, within modes and intermodally, centering on operational, engineering and other technical considerations, and including detailed analysis of costs and rates.
- To provide other groups in the department, other Saskatchewan government departments and industry in the province with specialized technical assistance concerning transportation technology and systems.

The branch is organized into two specialized technical units: The road systems unit and the rail systems unit.

Road Systems Unit

Bulk Commodity Policy

The road systems unit staff negotiated several agreements with shippers regarding industrial truck hauls pursuant to the terms and conditions of the Bulk Commodity Policy. This included new agreements with International Minerals and Chemicals, Key Lake Mining Corporation and Genstar Cement. As well, staff handled the administration of all existing agreements pursuant to this policy.

Timber Transportation Policy

Staff are currently negotiating new agreements with Simpson Timber and MacMillan Bloedel regarding overweight and overdimension permits for vehicles hauling raw forest products. Staff also administered existing agreements pursuant to this policy.

Overlength Vehicle Program

Staff, in co-operation with Federated Co-operatives Limited, tested the feasibility of operating twin semi-trailers in combination on the four-lane highway system. The favourable results of the test led to the expansion of the program to include this configuration. The agreements were revised and all interested carriers subsequently received permits for this configuration. An active monitoring program was undertaken as well.

Grain Handling and Transportation Studies

Staff undertook a province-wide study to determine the impact of branch line abandonment on the provincial road system.

Vehicle Suspension Study

Staff continued to work with the University of Saskatchewan, Department of Engineering, to determine the reaction of various truck suspensions under dynamic loadings and their impact on road surfaces and vehicles. The study should be complete in 1985.

Fuel Consumption Study

The road systems unit staff, in conjunction with industry, undertook a fuel consumption study relating to the operation of overlength vehicles. The study will be completed in 1984.

Roads & Transportation Association of Canada — Canadian Council of Motor Transport Administrators, Vehicle Weights and Dimension Study

The road systems unit staff are actively involved with officials from private industry and other governments in a national vehicle weight and dimension study intended to identify a group of vehicles that would be permitted on a nation wide basis at uniform weight and dimensions. The study is to be complete in 1987.

Traffic Impact Study

The road systems unit staff conducted an extensive study of the impact of vehicle length on passing maneuvers. The study entailed development of a computer program to predict vehicle conflicts when one vehicle is passing another on highways of different traffic volumes.

Equipment Testing and Evaluation

Staff continued to work with industry in testing and evaluating new transportation technology. The unit sponsored several seminars throughout the year to familiarize industry with new developments and progress related to studies undertaken at the national level.

Rail Systems Unit

Regina Rail Relocation

In 1981, the Federal Minister of Transportation announced a $23.75 million grant to assist Regina in its endeavours to relocate the North Regina CN rail yards and associated CP and CN subdivisions to its north east periphery (Phase I).

The unit committed itself to determine incremental operations and maintenance costs applicable to the new rail system. In addition, the unit assisted with the final preparations of the actual application filed with CTC, March 31, 1984.

Yorkton Rail Relocation

With the assistance of the unit, the City of Yorkton continued their examination of rail relocation. The unit has played a major role in negotiations with CP Rail. Further negotiations are anticipated in 1984 to finalize the project cost. The City has relied heavily in the past upon the unit for technical expertise and advice during negotiations with the railway and has requested that the unit continue its involvement to the same degree.

Freight Traffic Interswitching

The Railway Transport Committee invited all interested groups and individuals to submit in writing, views and recommendations concerning General Order T-12 which embodies Freight Traffic Interswitching Regulations. The unit forwarded a statement which, in principle, recommended a thorough investigation into the 65-year old regulations affecting interswitching, particularly, in view of the need for changes in the rail transport environment to meet current industry requirements.

The unit is monitoring development and intends to pursue this issue with the CTC so as to ensure that the public's interest is adequately protected.

Grain Handling and Transportation

The unit continued to investigate and monitor the several options available to transport and handle grain, bearing in mind the federal branch line rehabilitation program, rail line abandonment and activities pursuant to the passage of the Western Grain Transportation Act and its impact on the Saskatchewan economy.

Federal Branch Line Rehabilitation Program

Investigations into various aspects of the federal Branch Line Rehabilitation Program were continued.

An analysis was undertaken by the unit and forwarded to the CTC and Transport Canada, discussing the whole issue of the Prairie Branch Line Rehabilitation Program, its track standards and the impact of these on grain transportation costs. It is expected that a meeting with and discussions of this subject with the parties concerned will be forthcoming.

Railway Costing

The unit developed a computer program to calculate the costs of a railway movement using CTC approved unit costs provided to the province on a confidential basis. The program will permit the province to react quickly to issues such as rate increases or changes in operating and maintenance costs due to rail relocation proposals.

Cost of Capital Review

The unit participated in a review of railway costing procedures initiated by the CTC. The unit has represented the province's views and interests during technical meetings with all parties aimed at reducing the number of issues required to be addressed by the public hearing process. The unit also assisted in the preparation of the provincial submission to CTC. The issue of railway costing is extremely important to Saskatchewan since it affects the grain rates charged to producers and forms the basis for determining the economic viability of branch issues.

Planning Branch

The transportation planning and programming section of the branch is responsible for developing and recommending the department's annual and long-range capital programs, and for conducting policy, planning and evaluation studies related to the capital programs.

Major accomplishments during 1983-84 were:

- The 1983 edition of the annual and five-year capital program was developed.
- The ten-year objectives of the capital program, developed in 1981, were monitored and reviewed particularly in terms of four-laning needs.
- An interchange and controlled area study was completed resulting in a reduced number of controlled areas for future interchanges.
- Highways and roads in northern Saskatchewan were reclassified on a functional rather than geographic basis.
- The provincial highway map was revised to indicate road jurisdiction in addition to road standard. Provincial roads in the north were designated by 900 series numbers.
- Revised functional design standards were implemented.
- Route programming studies were completed for Highway No. 13 and 21.
- An evaluation of the special safety improvement program was conducted.
- The Airport Assistance Policy was reviewed.

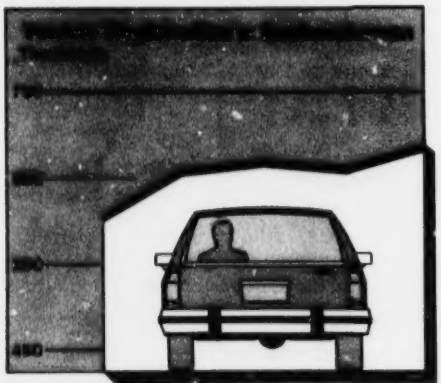
Urban Transportation

The urban transportation section of the branch is responsible for recommending policy related to the cost shared Urban Assistance Program, preparing the annual urban assistance budget and providing technical guidance to the districts and cities involved in various transportation studies.

In 1983-84 technical assistance was provided on the following studies:

- Estevan Transportation Study.
- Highway 16 Yorkton Bypass Study.
- Junction Highways No. 7 and No. 14 Functional Planning Study.
- Junction Highway No. 16 and Marquis Drive Functional Planning Study.
- Circle Drive/Preston Avenue/Clarence Avenue Functional Planning Study.
- Albert Street (Regina) Reconstruction Study.

Additional projects included a review of provincial urban roadway assistance programs in other provinces.



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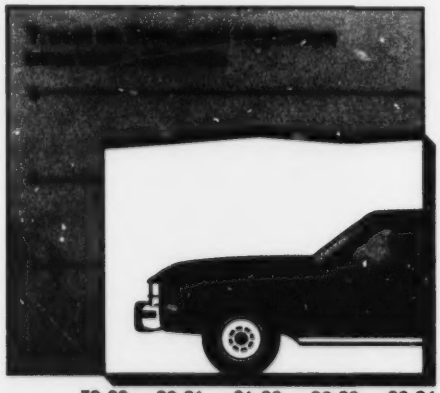
Traffic Research

The traffic research section of the branch is responsible for obtaining and providing information on matters related to highway traffic. Some of the activities undertaken during 1983-84 were:

- Obtaining traffic volume data on the provincial highway system. Travel on provincial highways increased by 2.5% from 1982 to 1983.
- Studied the effect that changes in weight regulation had on truck travel.
- Studied the frequency of occurrence of vehicles using paved highway shoulders.



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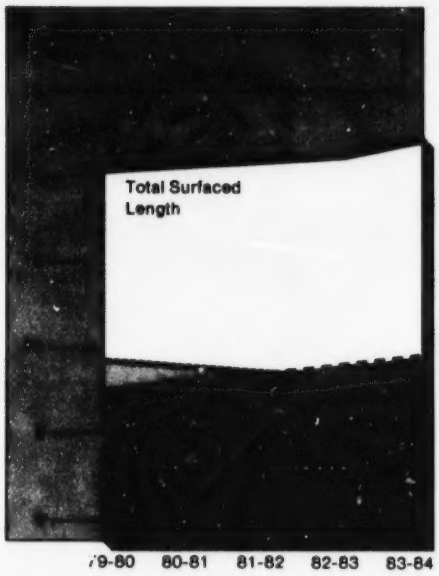
- Reviewed the permanent automatic traffic recorder program for the provincial highway system.
- Developed a five-year program for the construction of loadometer sites. Loadometer sites are used for enforcing vehicle weight regulations.
- Prepared a report, based on literature research, concerning the relationship between enforcement of and compliance to vehicle weight regulations.
- Studied the speed of vehicles on provincial highways. The general findings of the study are that average speed on 100 km/h highways is 100.3 km/h, and on 90 km/h highways is 92.3 km/h.
- Developed a traffic counting program for northern roads.
- Updated traffic information for use in the planning and engineering of highways to be reconstructed in future years.
- Conducted miscellaneous traffic studies dealing with highway capacity, accident analyses, and traffic operation analyses.



Other Activities

With the establishment of the new division, certain activities have been added to this branch's mandate. These include co-ordination of provincial activities related to the transportation of dangerous goods, planning of northern transportation and the co-ordination of departmental legislation and regulations.

Regulation and Traffic Safety Division

The mandate of this division is to promote legal, safe and economic operations concerning commercial and private vehicles within the province. This mandate is met within three working units of this division, namely Transport Services Branch, Driver and Vehicle Safety Services Branch and Highway Traffic Board Services Branch.

The division performs support function for the Highway Traffic Board by developing policy options for possible implementation, administering the daily functioning of the Board, and by requesting or implementing Board decisions.

During the last year, the staff of the Regulation and Traffic Safety Division re-wrote the Vehicles Act. Simultaneously, regulations made pursuant to the Vehicles Act were drafted and assembled into packages to achieve a greater degree of clarity. This is an on-going project. We strive to continue to improve the regulations and the Vehicles Act.

This past year has been an interesting and challenging one for the division. Our amalgamation with the Department of Highways and Transportation necessitated some re-organization within our own structure, and the passing of new legislation placed heavy demands on staff resources.

Details of specific programs and accomplishments are provided in the following branch and section reports.

W. R. McLaren

Bill McLaren
Director of Regulation and Traffic Safety Division

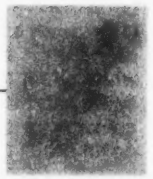
James W. Garner
Minister, Highways and Transportation

J. R. Sutherland
Deputy Minister

W. McLaren
Regulation and Traffic Safety Division

D. T. Pollock
Transport Services Branch

C. Shiels
Traffic Safety Services Branch



Vacant
Highway Traffic Board Services Branch

Traffic Safety Services Branch

The Saskatchewan population has come to rely, for economic, geographic and social reasons, upon privately and publicly operated motor vehicles to the point that transportation can now be considered a basic necessity. For that reason, near universal access to motor vehicle transportation services at reasonable cost is required.

The broad objective towards which Traffic Safety Services works is the establishment of a motor vehicle transportation system which represents the optimum balance between operational costs, accessibility, public expectations and safety for all road users and for consumers of motor vehicle transportation services.

The strategies adopted by the branch stem from its legislative and administrative mandate. These include programs and activities related to:

- Driver development.
- Driver records and control.
- Vehicle standards.
- Co-ordination and research.

Some of the programs the branch has been involved in are increasing inter-governmental communications, preparation of an All Terrain Vehicles Act white paper for public input and assisting in the establishment of a ministerial advisory committee to review current commercial truck inspection and maintenance standards.

Driver Development

The Driver Development section is responsible for carrying out written, vision and practical tests for all applicants for driver licences. The section also conducts special assessments of senior and handicapped drivers.

A total of 64,779 written tests were conducted in 1983-84, down 28.8% from the previous year. This is primarily due to the fact that written tests are no longer required by new residents presently holding an operator's licence. As well, 40,640 road tests were conducted in 1983-84, down 1.2% from the previous year.

By year end, 52 centres where driver tests are conducted were served by the toll free, central booking servce. Toll free booking will be expanded to all centres except Regina, Saskatoon and Lloydminster in the coming year.

Driver Records and Control

Up-to-date computer records are maintained on each of Saskatchewan's approximately 600,000 drivers. The Driver Records and Control section carried out 160,000 driver file updates and administered 13,617 statutory licence suspensions. A total of 702 driver files were referred to the Board for consideration and possible action on matters such as medicals, suspensions or reinstatements.

A total of 572 drivers, convicted for the first time of alcohol-related driving offences, took advantage of the early licence reinstatement program. To qualify, they were required to complete an application and submit a $150.00 driver licence fee, successfully complete a driving without impairment program, (D.W.I.) and serve at least three months of the six month suspension.

Vehicle Standards and Inspections

Periodic inspection programs for school buses, buses, semi-trailers and power units continued to operate throughout the year. An inspection program for vehicles converted to pressurized fuel was initiated January 1, 1984.

Inspections are conducted annually under the School Bus, Bus and Semi-Trailer Inspection Programs. During

Test Types

Test Type	1982/83	1983/84	% Change (+/–)
Practical Tests			
Class 1-4 Road Tests	2,351	2,184	7.1% –
Class 5 Road Tests	29,886	28,728	3.9% –
Class 6 Road Tests	2,167	2,102	3.0% –
New School Bus	982	1,226	24.8% +
Pre-test School Bus	932	1,038	11.3% +
Air Brake & Pre-Trip	4,805	5,362	11.5% +
Total Practical Tests	41,123	40,640	1.2% –
Total written tests	91,000	64,779	28.8% –
Total vision tests	25,465	18,502	27.3% –

the year, 3,850 school buses, 798 buses and 5,504 semi-trailers were inspected under their respective inspection programs.

A total of 5,731 power units were inspected under the Power Unit Inspection Program conducted semi-annually.

Under the recently introduced Liquid Petroleum Gas Inspection Program, 1,100 vehicle inspections for pressurized fuel conversion were carried out.

Co-ordination and Research

The Co-ordination and Research section provides liaison between Safety Services Branch and other departments of government, other levels of governments, non-government safety groups and the public. Research was conducted in the area of seat belt usage and effectiveness, the accident and violation experience of young drivers, as well as school bus accidents.

Highway Traffic Board Services Branch

The Highway Traffic Board Services Branch provides support services to the other two branches of the Regulation and Traffic Safety Division. It furnishes administrative support to the division and conducts policy development and analysis on specific topics assigned to it by the Chairman of the Highway Traffic Board. As well, it co-ordinates the legislation and regulation development for the division.

In 1983-84, the branch was in its first year of operation. In the area of administration, it co-ordinated the processing of all accounts and invoices received by the division.

A major thrust in 1983-84, which the branch co-ordinated development of, was the completion of the re-write of the Vehicles Act and new regulations under it. The Vehicles Act, 1983, together with a package of regulations, took effect on November 1, 1983.

Another project completed during the year was the establishment of a system of manuals for use by members of the Highway Traffic Board and employees of the division. This system will ensure the effective implementation and dissemination of established policies and procedures.

The branch also contributed to discussions involving Board members and division staff with representatives of private companies in these areas:

- Regulation of the charter bus industry.
- Modifications to the rural general merchandise carrier system.
- Ongoing consideration of changes to regulation of certain other sectors of the trucking industry.

The branch represented the division on the inter-departmental Regulatory Reform Committee headed by Executive Council. A significant contribution to the government's objective of reducing unnecessary and obsolete regulations was made with the repeal of 140 regulations.

Transport Services Branch

The mission of this branch is to promote a smoothly functioning, viable motor carrier industry that follows established principles of public service, protection and compensation. This is accomplished through the Transport Regulation section and the Transport Compliance section.

Both sections work towards the following objectives regarding motor carrier service:

- Ensure goods and services can be obtained to maintain an acceptable standard of living, and that reasonable economic business requirements are satisfied through accessibility of service; frequency of service; reliability of service and quality of service.
- Promote a system of transport services that results in the optimal allocation of transportation resources within the Saskatchewan economy.
- Promote a system of transport services that operates within rate schedules which allow for delivery of relatively similar services.
- Promote a transport system that operates with minimal loss of life, injury, damage to property, and minimal social costs through safely operated vehicles; properly maintained vehicles and protection from contamination by dangerous commodities.

The branch also has been involved in evaluating the degree of regulation that the board should engage in with respect to various sectors of the transportation industry. This program is ongoing, and consists of an evaluation of regulatory systems for each sector, with carrier and shipper participation. Progress has been made in these areas:

- Internal administrative procedures and forms have been restructured, reducing the time involved in processing applications.
- Entry and rate regulations for provincial courier services are being changed, substantially reducing regulation of this sector.
- These projects and others have been a large part of the Highway Traffic Board's contribution to the government's Regulatory Reform Committee's progress reports.

Transport Regulation Section

The market structure and performance of the motor carrier industry is subject to economic regulation. This regulation, designed to ensure adequate freight and passenger service to Saskatchewan residents includes:

- Prescribing service levels.
- Controlling entry into the market through granting or denying operating authorities to motor carriers.
- Setting the rates carriers may charge.
- Establishing the conditions under which carriers are allowed to operate such as bonding and conditions of carriage.

Motor Carrier Regulation Unit

Operating authority administration involves processing motor carrier applications for new authorities, providing administrative support to the public hearing process, monitoring carriers for fitness, and instituting disciplinary action. As well, a consumer relations function provides information services regarding the responsibilities and services provided by for-hire carriers. This unit recorded 1,610 consultations in 1983-1984. Over the same period, 453 applications for operating authority were processed, of which 259 were for for-hire carriers.

Fitness Review Program

One of the policies of the Highway Traffic Board is to promote compliance with transport laws and regulations by those involved in the motor carrier industry. The Board has established a program of fitness review to realistically deal with the matter.

A central registry of all transport law violations, disclosed by enforcement staff, along with a recording of the violators, will be maintained and continuously reviewed. In accordance with pre-determined non-compliance levels, certain registration and/or authority holders will be subject to action in the form of letters and counselling sessions which will seek to increase voluntary compliance.

It is expected that these methods will improve the compliance performance of most carriers. Ultimately, if an improvement is not evident, the final action would be for the Board to hold a hearing to determine the fitness of a particular carrier to continue to hold either an authority certificate, if it is a for-hire carrier being dealt with, or a registration certificate, if it is a private carrier.

Vehicle Registration Unit

Vehicle registration and permit policy is reviewed, established, and adjusted to meet the needs of the registrants of the 845,000 vehicles requiring registration in Saskatchewan.

Personalized licence plates were introduced for both private passenger and farm vehicles.

Vehicle Registration

Class	Description	Number of Vehicles Registered as of December 1983
A	Public Service	2,517
AG	Rural General Merchandise	248
C	Commercial Vehicle C	23,558
D	Commercial Vehicle D	26,111
F	Farm Truck (Class F)	155,538
R	Restricted Farm Vehicle (Class R)	10,735
PV	Private Vehicle	499,755
T	Private Trailer	89,812
TS	Commercial Trailer	11,693
PB	Passenger PSV Bus	141
PC	Passenger City Bus	349
PS	Passenger School Bus	3,396
PT	Taxi	582
ME	Snowmobile	15,172
L	Licensed Auto Dealer	3,418
FEDS	Federal Government	2,003
Total		845,028

Central Permit Office

A central permit operation providing authorizations for operating authorities, vehicle registrations, and weight and dimension authorities was established on a round-the-clock basis to service the motor carrier industry. In the 1983-84 fiscal year, 42,836 permits were issued.

Board Affairs

Board Affairs provides secretarial support for the Motor Carrier Committee of the Highway Traffic Board. The administrator assists applicants by counselling them on hearing procedures, encouraging pre-hearing meetings, and scheduling hearings both within Saskatchewan and in co-operation with other provinces' transport boards where convenient to parties to the hearing. Over the last year, public hearings were held to consider 65 applications.

Motor Carrier Operations Review Unit

Analytical services regarding the motor carrier system are provided by this unit. In 1983-84, new rates were established for carriage of general merchandise, petroleum, household goods, bus passenger and express. As well, a review of several specific filed rates submitted by carriers was completed. The regulations governing conditions of carriage were rewritten as part of the regulations under The Vehicles Act, 1983. Background reports were prepared to assist the Board in its activities related to regulatory review of the courier sector.

Transport Compliance Section

The Transport Compliance section was officially created when six investigative officers were amalgamated with traffic officers of the Highway Transport Patrol. This is a law enforcement group who police and serve the road transportation industry in Saskatchewan. The main programs consist of weight and dimension enforcement, economic regulation (operating authority and registration control) and vehicle and driver safety enforcement. Program delivery takes place through weigh scale duty, highway patrol and off-highway investigations. Over the last year, the existing five enforcement regions were reorganized into three with a newly-created superintendent position in charge of each region.

During 1983-84, enforcement staff participated in 57 public meetings throughout the province in which the law in relation to economic regulation, weight and dimension and safety was discussed. Approximately 2,500 persons from the trucking industry, safety councils, rural municipalities, public schools and universities, other enforcement agencies and various service clubs attended these meetings.

In order to better meet management objectives, monitor activities and plan for the future, a computer system was introduced to store information on charges, warnings, vehicle checks and person-hours.

Staff was heavily involved in rewriting The Vehicles Act, 1983, particularly in the areas of vehicle equipment, safety standards and rules of the road. This year, operational guidelines for enforcement staff were developed with the introduction of a new transport compliance manual.

The construction of divided highway west of the City of Swift Current necessitated major renovations to the Swift Current weigh scale. These included the installation of new outside digital weight readout boards, a large 14' x 14' scale platform and new electronic weighing and printing equipment. New standards for future weigh scale building sites and equipment were introduced in 1983-84. Over the same period, the installation of external public pay phones at our weigh scale detachments was accomplished in order to better assist the trucking industry and public in obtaining permits and emergency information or service.

A five-day motor carrier training course was developed and conducted in two sessions by Transport Compliance and Board instructors for both senior and junior levels of enforcement staff. The section hosted a five-day conference of Motor Carrier Enforcement Administrators on communication and investigation.

Motor Carrier Law Enforcement Activities 1983-84

Activity	Distribution of effort (%)	No. of Invest.	No. of Inspections Conducted			Percentage in Violation		No. of Charges & Written Warnings
			Scale	Patrol	Total	Scale	Patrol	
*Economic Regulation	51%	851	35,426	24,211	59,637	6.8%	9.8%	1,812
Weight and Dimension Control	29%	196	111,638	15,091	126,729	4.6%	14.4%	2,126
Vehicle and Driver Safety	20%	86	16,166	19,529	35,695	11.7%	15.9%	2,135
Total	100%	1,136	163,230	58,831	222,061			6,073

*Economic Regulation includes vehicle registration and operating authorities.

1983/84 Charges and Written Warnings by Statutes

Act	1982/83	1983/84
Vehicles Act	2,331	3,674
Highways Act	1,773	2,146
Motor Vehicle Transport Act (Canada)	167	183
Liquor Act	38	54
Other Acts (Animal Products Act, Anhydrous Ammonia Regs., Criminal Code, etc.)	32	16
Total	**4,341**	**6,073**

Support Services Division

The mission of the Support Services Division is to provide services essential to the overall efficient management and operation of the department.

The primary services are in the areas of staffing, personnel management and training, financial management and control, management and administrative systems, computer services, property acquisition and property management.

Organizationally, the division is structured on a functional basis with each of four Branches (Personnel Services, Management Services, Financial Services, Property Services) providing the department with a specialized service.

The role of the division was expanded this year to include the provision of support services to the Regulation and Traffic Safety Division and the Transportation Policy and Systems Branches which were amalgamated with the department on April 1, 1983.

The new Department of Highways and Transportation Act, which was passed this year, consolidates the broad powers, duties and administrative authorities that previously existed in "The Highways Act" and "The Transportation Act". The Transportation Act, formerly administered by the Transportation Agency of Saskatchewan, was repealed and this action finalized the amalgamation of the agency with the department.

The department is highly advanced in the development and application of engineering, financial and management systems. A new automated Capital Budget Control System was implemented at the beginning of this fiscal year. It provides for input and retrieval capabilities direct from the district offices with the ability to accumulate project cost information centrally for fiscal forecasting and timely management decision purposes.

The department continues to have a highly qualified, competent staff. Staff training and management development programs extend to all levels of the organization.

James W. Garner
Minister, Highways and Transportation

J. R. Sutherland
Deputy Minister

J. A. Schwartz
Support Services Division

P. Fitzel
Financial Services Branch

A. I. Massier
Management Services Branch

A. G. Tuer
Property Services Branch

R. M. Reavley
Personnel Services Branch

Productivity improvement initiatives and accomplishments are being pursued and achieved on a continual basis. Details of specific services and accomplishments are provided in the following individual branch reports.

J. A. Schwartz
Exec. Director, Support Services Division

Personnel Services Branch

The branch continues to meet the challenge of providing central services in the area of human resources management by:

- Providing guidance and assistance in areas of management of human resources, employee benefits, industrial safety, industrial relations, staffing, classification, staff training and development.
- Identifying training needs, developing and delivering programs to meet those needs.
- Conducting manpower planning activities to ensure that the department will continue to have employees with the necessary skills to carry out its programs in an effective and efficient manner.

Labour Relations

Problem solving meetings were held with the Union on an on-going basis to attempt to resolve problems before they become formal grievances.

Staffing and Reclassification

Competitions were held to fill 46 public service and 78 labour service vacancies.

There were eight employees who requested a review of their jobs to determine if they were properly classified.

Branch staff was involved in an audit of the classifications of all labour service employees employed throughout the public service.

Training and Development

The department maintained its emphasis on employee training and development activities during the year. Courses included management, supervisory, technical, trade and equipment operation.

The equipment training section conducted or co-ordinated 88 classes for department employees during the year with a combined attendance of 879 amounting to a total of 1,131 equivalent training days.

Management development programs were given special attention. A total of 335 employees attended 52 courses with a combined total of 733 training days. These courses included government project management; effective writing; contracts and specifications; contract law; highway geometric design; managing stress; users role in computer based systems; improving interpersonal skills; clerical skills; leader effectiveness; managing conflict; management of special projects; managing time and managing meetings.

A total of 62 employees attended courses sponsored by the Public Service Commission.

Four department employees were enrolled in the Administrative Development Diploma Program.

Safety Section

A major objective of the department is to provide a safe work place for all employees. Safety section's objective is to promote safe work practices and procedures through training, inspection, investigations, meetings and promotional materials.

Safety training was provided throughout the department as follows:

- 362 person days of Defensive Driving and Professional Driver Improvement Courses.
- 371 person days of Multi-Media and Standard First Aid Training.
- 74 person days of fire fighting and flagperson instruction training.

Safety inspections of department worksites and facilities were conducted on 475 occasions to ensure that public safety measures were in place and 396 inspections of work places were carried out to reinforce safe work practices and procedures. Branch staff attended 15 Local, Regional and Central Occupational Health and Safety Committee meetings throughout the year.

The section conducted worksite safety meetings which were attended by 1,084 employees. Topics covered a variety of subjects dealing with department policies and procedures, occupational health and safety, as well as legislative changes of concern to the group.

During the year the section was involved in committee work on the Chemical Substance Regulations, the proposed Accident Prevention Regulations and the study of more suitable traffic control measures in the department.

In the calendar year there were 109 lost time injuries and 118 medical aid claims processed in the department.

Management Services Branch

Management Services Branch is responsible for providing, assisting in and promoting the analysis, development, implementation, operation and maintenance of effective and efficient Management Information Systems for the department. Some of the major activities are:

- Develop and implement Management Information Systems to meet the needs of the department.
- Provide data processing services.
- Train user branches and districts in the operation of data processing equipment, related procedures and applications development.
- Actively monitor systems so that program managers at all levels have information available to review quantity, quality, time and cost status for each of their programs in the appropriate degree of detail.
- Coordinate and conduct organizational reviews of department units.
- Provide liaison with other departments and agencies of government in carrying out assigned duties.

The branch is continually involved in developing methods and procedures to improve productivity, and assisting managers in improving management decisions. Major areas of activity were as follows:

- A new comprehensive Equipment Management Information system was implemented to improve the overall management of the heavy equipment fleet, the stores inventory and repair depots.
- The organization of the repair depots was analysed resulting in the amalgamation of the Prince Albert repair function at one location.
- A new capital program and budget control system was implemented this year. This system maintains an up to date status of all capital projects.
- The Revolving Fund Accounting system was modified and updated to meet the needs of the Equipment Management Information system and better fulfill the needs of the department managers.
- A study was performed to analyse the needs of the maintenance areas to determine their information requirements for maintenance management.
- The Maintenance Management Information system was modified to operate from the area headquarters, and a one month pilot project was carried out in three of the areas. This pilot project was very successful and plans are in place to expand the installation of computer equipment at all area headquarters.
- In order to improve the effectiveness of the department's computer processing, considerable effort was spent in assisting branch and district managers in the utilization of computing equipment.
- A study to determine Head Office space requirements in preparation for the change in department organization and amalgamation with other agencies was completed.
- The department's signing authority document was reviewed and updated to reflect the recent reorganization and realignment.

Property Services Branch

Property Services Branch is responsible for:

- Appraisal and negotiation for land for various department programs.
- Arranging for the legal survey services required in connection with departmental right of way and public improvement projects.
- The registration of rights to property to meet the department's construction schedule and the Grid and Main Farm Access Road Program.
- Payment for various related services and for land where title has been secured.
- The management of property rights under the jurisdiction of the department pertaining to public highways and public improvements.

Property Acquisition

Appraisals were carried out and property acquired for right of way on 36 separate projects as well as a number of public improvements. Some of the major property acquisition projects included the right of way for the Lewvan project between the Trans Canada Highway and Regina Avenue in Regina, the land required for the relocation of Highway No. 16 to the new Borden Bridge location and the property required for the second set of lanes on the Trans Canada Highway near Webb.

Legal Survey Contracts

The department's legal survey requirements for 1983-84 highway construction and public improvement projects were met and the legal survey of ten airport sites in northern Saskatchewan also were completed.

Property Registration

The registration of plans of survey and legal documents was completed on time to meet construction schedules in respect to the provincial highway program and was satisfactorily maintained in respect to the Grid and Main Farm Access Programs. This accomplishment reflects a commitment by branch staff to improving systems and increased productivity.

Property Management

The volume of requests for consents, permits and other administrative considerations in respect to departmental properties and property rights under the jurisdiction of the department increased by some 30%. The staff was able to maintain a very satisfactory level of service with a similar increase in production of 30%.

1983-84 Accomplishments

Provincial Highway Surveys	121 km
Public Improvements & Miscellaneous Surveys	40 plans
Grid & Main Farm Access Roads	184 plans
Plans of Survey Recorded:	
— Including Highways, Subdivisions, Pipelines & Miscellaneous	913
Highway Plans of Survey Processed	381
Highway Plans of Survey Registered	403
Consents & Permits Issued	1,327
Property agreements paid	650

Financial Services Branch

Financial Services Branch is responsible for the financial affairs of the Highways Appropriation and Highways Revolving Fund.

The branch processes payments and receipts, maintains records and produces financial and statistical reports. The branch also schedules and co-ordinates preparation of the department's annual administrative budget.

An automated S-4 (employee expenses) system was developed and implemented during 1983.

The branch took on the added responsibilities of financial administration for the Highway Traffic Board, Transportation Agency, and Transportation Policy Unit following amalgamation of these units with the department on April 1, 1983.

Payment of Accounts

In 1983-84 the accounting section processed a total of 115,304 invoices. These payments were processed within the guidelines set out by Saskatchewan Finance.

Receipts

Cash receipts through Appropriations Section amounted to $3,240,892.53.

Payroll

The payroll section produced 27,362 cheques for hourly paid employees along with personal statistical records. Payment for wages, travel and sustenance amounted to $25,041,462.62.

Accumulated Expenditure 1905 to Date

Fiscal Year	Current Year	To Date
1905-06	49,546	49,546
1906-07	484,177	533,723
1907-08	1,041,383	1,575,106
1908-09	1,443,335	3,018,441
1909-10	591,957	3,610,398
1910-11	610,920	4,221,318
1911-12	614,356	4,835,674
1912-13	2,525,188	7,360,862
1913-14	1,970,135	9,330,997
1914-15	2,370,439	11,701,436
1915-16	831,594	12,533,030
1916-17	536,594	13,069,624
1917-18	815,438	13,885,062
1918-19	616,472	14,501,534
1919-20	1,306,370	15,807,904
1920-21	1,804,973	17,612,877
1921-22	2,495,925	20,108,802
1922-23	2,201,358	22,310,160
1923-24	2,037,295	24,347,455
1924-25	2,229,408	26,576,863
1925-26	2,123,173	28,700,036
1926-27	2,660,195	31,360,231
1927-28	2,488,961	33,849,192
1928-29	4,228,261	38,077,453
1929-30	6,664,400	44,741,853
1930-31	10,703,359	55,445,212
1931-32	8,149,746	63,594,958
1932-33	905,374	64,500,332
1933-34	862,029	65,362,361
1934-35	1,661,983	67,024,344
1935-36	1,620,142	68,644,486
1936-37	2,595,381	71,239,867
1937-38	2,823,356	74,063,223
1938-39	3,509,280	77,572,503
1939-40	3,399,603	80,972,106
1940-41	1,706,382	82,678,488
1941-42	1,874,917	84,553,405
1942-43	2,126,374	86,679,779
1943-44	2,918,157	89,597,936
1944-45	3,387,320	92,985,256
1945-46	3,908,367	96,893,623
1946-47	6,312,801	103,206,424
1947-48	8,840,535	112,046,959
1948-49	8,853,999	120,900,958
1949-50	8,767,610	129,668,568
1950-51	10,118,744	139,787,312
1951-52	12,823,535	152,610,847
1952-53	18,919,646	171,530,493
1953-54	19,135,070	190,665,563
1954-55	20,395,779	211,061,342
1955-56	20,127,262	231,188,604
1956-57	24,140,190	255,328,794
1957-58	24,491,369	279,820,163
1958-59	23,697,574	303,517,737
1959-60	23,104,119	326,621,856
1960-61	25,237,066	351,858,922
1961-62	21,591,307	373,450,229
1962-63	22,094,828	395,545,057
1963-64	24,167,674	419,712,731
1964-65	27,152,511	446,865,242
1965-66	40,679,979	487,545,221
1966-67	54,387,704	541,932,925
1967-68	60,227,543	602,160,468
1968-69	60,110,923	662,271,391
1969-70	58,560,829	720,832,220
1970-71	68,081,718	788,913,938
1971-72	66,933,052	855,846,990
1972-73	63,362,093	919,209,083
1973-74	69,456,878	988,665,961
1974-75	96,760,356	1,085,426,317
1975-76	110,162,524	1,195,588,841
1976-77	123,321,325	1,318,910,166
1977-78	132,425,146	1,451,335,312
1978-79	160,610,850	1,611,946,162
1979-80	158,107,523	1,770,053,685
1980-81	168,287,313	1,938,340,998
1981-82	191,474,090	2,129,815,088
1982-83	192,829,361	2,322,644,449
1983-84	215,968,431	2,538,612,880

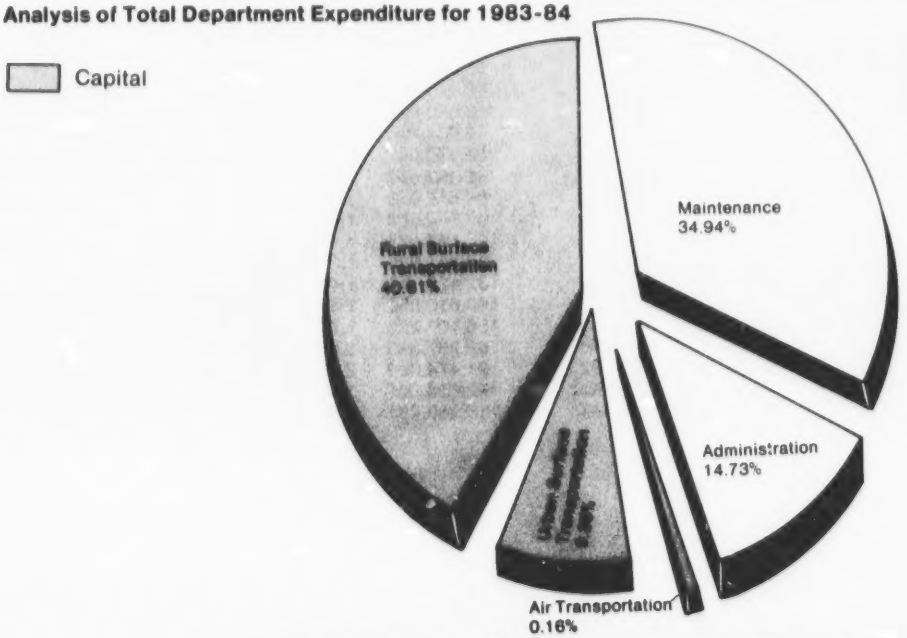
Appropriation and Expenditure 1983-84

	Appropriation	Expenditure
Ordinary		
Executive Administration Branch	$ 813,510	$ 874,679
Financial Services Branch	726,830	668,711
Personnel Services Branch	857,220	841,883
Policy, Planning and Development Division	1,575,650	1,379,231
Property Services Branch	776,170	784,233
Works Branch	114,630	105,910
Public Communications Branch	491,140	541,269
Operations Branch	1,254,810	976,223
Engineering Division	2,324,370	2,394,394
Traffic Safety Engineering Branch	299,440	311,795
Bridge Branch	510,540	498,085
Swift Current District	1,266,120	1,233,360
Regina District	1,738,770	1,761,353
Yorkton District	1,285,400	1,288,064
Saskatoon District	1,177,820	1,174,227
Prince Albert District	1,921,660	1,820,446
North Battleford District	1,564,880	1,530,248
Management Services Branch	1,091,730	1,133,065
Grants	177,920	175,993
Traffic Safety Services Branch	2,410,940	2,410,048
Motor Transport Services Branch	2,689,970	2,810,318
H.T.B. Services Branch	504,120	572,165
Payment to S.G.I.	6,410,290	6,525,388
	$ 31,983,930	$ 31,811,088
Maintenance	79,244,100	75,468,664
	$111,228,030	$107,279,752
Capital		
Rural Surface Transportation	$ 91,275,000	$ 88,130,373
Urban Surface Transportation	18,440,000	20,209,229
Air Transportation	285,000	349,077
	$110,000,000	$108,688,679
Total	**$221,228,030**	**$215,968,431**

* Appropriation does not include special warrants:

Ordinary	$ 500,000
Capital	750,000

Analysis of Total Department Expenditure for 1983-84



Urban Surface Transportation (Shareable)

Roadways	
Cities	$18,546,467
Towns	1,348,106
Villages	293,667
Rural Municipalities (Hamlets)	20,989
	$20,209,229

Cities	
Estevan	$ 26,559
Lloydminster	55,306
Melfort	7,216
Melville	61,560
Moose Jaw	337,254
North Battleford	1,119,288
Prince Albert	69,479
Regina	8,122,533
Saskatoon	7,667,123
Swift Current	325,718
Weyburn	702,089
Yorkton	52,342
	$18,546,467

Towns	
Balcarres	$ 41,974
Balgonie	15,510
Bengough	450
Colonsay	450
Creighton	79,184
Cupar	108,123
Davidson	276,881
Dundurn	29,744
Humboldt	154,947
Imperial	87,348
Kelvington	5,146
Lafleche	6,779
Maidstone	78,160
Maple Creek	222,772
Nipawin	12,998
Nokomis	6,060
Redvers	71,915
Rouleau	1,328
Shaunavon	3,086
Southey	3,139
Stoughton	7,235
Tisdale	9,750
Vonda	19,513
Waldheim	2,777
Wapella	4,370
Willow Bunch	98,467
	$ 1,348,106

Villages	
Aberdeen	$ 375
Birds Point	12,642
Bjorkdale	101
Bulyea	2,221
Ceylon	450
Denzil	336
Drake	32
Frontier	105,065
Gainsborough	21,189
Glen Ewen	65,713
Hague	4,045
Harris	7,087
Keeler	450
Kennedy	3,018
Leross	335
Mendham	11,819
Minton	76
Paddockwood	1,994
Rabbit Lake	6,098
Richmound	6,497
Saskatchewan Beach	2,567
Silton	17,218
Tantallon	450
Turtleford	23,320
Weirdale	569
	$ 293,667

Rural Municipalities	
Broken Shell	$ 586
Grayson	2,767
Hudson Bay	1,557
Pleasantdale	3,399
Meota	7,000
Sasman	1,330
Silverwood	4,350
	$ 20,989

Total	**$20,209,229**

Air Transportation 1983-84

Municipal Airports		
Assiniboia	$	9,935
Biggar		2,200
Canora		2,471
Cabri		1,750
Carlyle		45,550
Cudworth		5,011
Davidson		2,200
Esterhazy		3,450
Estevan		28,303
R.M. of Eye Hill		750
Gravelbourg		1,610
Humboldt		75,750
Kamsack		2,200
Kerrobert		750
Kindersley		3,700
Leader		3,620
Leoville		750
Luseland		750
Macklin		2,598
Melfort		23,719
Melville		2,200
Moose Jaw		3,700
Moosomin		750
Nipawin		8,472
Paradise Hill		4,000
Rockglen		3,998
Rosetown		2,200
R.M. of Snipe Lake		2,200
Shaunavon		2,200
Tisdale		2,200
Unity		24,257
Wadena		750
Weyburn		6,684
Wynyard		750
	$	281,428

Provincial Airports		
Beauval	$	7,627
Buffalo Narrows		8,137
Cumberland House		2,288
Deschambault		856
Ile-a-la-Crosse		7,385
La Loche		6,211
Patuanak		6,350
Pelican Narrows		5,278
Pinehouse		7,679
Sandy Bay		7,917
Wollaston Lake		7,921
	$	67,649
Total	**$**	**349,077**

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